MARKET COMMENTARY

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Proceedings of the Canadian Agricultural Outlook Conference
December 1987

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Foreword

The 53rd Canadian Agricultural Outlook Conference was held in Ottawa on December 14-15, 1987. The theme of the Conference was "The Changing Face of the Agriculture and Food Sector". The presentations from the first plenary session on the Conference theme are included in the proceedings. These presentations provide an overview of the changing structure in agriculture and examine the implications for the future directions of the agri-food sector. In the second plenary session, the papers presented summarize the outlook for major commodities, farm income, food markets and trade.

The proceedings also include invited papers in the seven concurrent sessions on commodity markets, food markets, farm costs and income, and the family farm forum. Specific aspects of the Conference theme were dealt with during these sessions.

More detailed information on the agri-food sector prospects for 1988 and 1989 may be found in the December 1987 issues of *Market Commentary* and *Food Market Commentary* and the *Commentary for Farm Inputs and Finance*.

Many persons have been helpful in preparing this proceedings. Their assistance is greatly appreciated.

Zuhair A. Hassan
Acting Director
Market Outlook and Analysis Division

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1987 CANADIAN AGRICULTURAL OUTLOOK CONFERENCE

DECEMBER 14 AND 15, 1987
GOVERNMENT CONFERENCE CENTER, OTTAWA

MONDAY, DECEMBER 14, 1987

08:00 **Registration**

Conference Chairman: Jean-Jacques Noreau
Deputy Minister
Agriculture Canada

Conference Theme: **"The Changing Face of the Agriculture and Food Sector"**

PLENARY SESSION I

Session Chairman: Jean-Jacques Noreau
Deputy Minister
Agriculture Canada

08:45 **Chairman's Opening Remarks**

09:00 **Minister's Speech**
The Honourable John Wise
Minister of Agriculture
Agriculture Canada

09:30 **Macroeconomy Outlook**
Mike McCracken
Informetrica

10:00 **Questions**

10:15 Break

10:45 **An Overview of the Changing Structure of the Agriculture and Food Sector**
Jean-Jacques Noreau
Deputy Minister
Agriculture Canada

11:15 **Implications of the Future Directions of the Agriculture and Food Sector**
Don Knoerr
President,
Canadian Federation of Agriculture

11:45 **Questions**

12:00 **Banquet**
R. Phillips, former Editor of the Western Producer, will speak on: "Changing Agriculture – Implications for the Farm Press" during the Banquet.

PLENARY SESSION II

Session Chairman: Frank Claydon
Assistant Deputy Minister
Policy Branch
Agriculture Canada

14:00 **Agri-Food Sector Outlook**
Frank Claydon and Dan Fenety
Agriculture Canada

14:30 **Farm Income Outlook**
B.B. Perkins
Agriculture Canada

15:00 Break

15:30 **Food Markets Outlook**
Brian Davey
Agriculture Canada

15:45 **Canadian Agricultural Trade Outlook**
Mike Gifford
Trade Negotiation Office

16:00-17:00 **Questions**

18:00-20:00 **Foreign Agricultural Attaché's Reception**

TUESDAY, DECEMBER 15, 1987

PLENARY SESSION III

Session Chairman: Jean-Jacques Noreau
Deputy Minister
Agriculture Canada

13:30 **Summary of Simultaneous Sessions**
J.E. McGowan
Senior Assistant Deputy Minister
Agriculture Canada

14:00 **Minister's Closing Speech**

14:30 **Dialogue With The Minister**
The Honourable John Wise
Minister of Agriculture
Agriculture Canada

15:00 - 16:00 **Closing Reception**

CONCURRENT SESSIONS

Tuesday, December 15, 1987

08:30 - 12:00	Livestock and Poultry (Main Hall)
08:30 - 12:00	Grains and Oilseeds (Sussex Room)
09:00 - 12:00	Milk and Dairy Products (Room 103)
08:30 - 12:00	Horticulture and Special Crops (Rideau Room)
09:00 - 12:00	Farm Costs and Income (Centennial Room)
09:00 - 12:00	Food (Gatineau Room)
08:30 - 12:00	The Family Farm and The Future of Canadian Agriculture (Colonel By Room)

LIVESTOCK AND POULTRY

– Main Hall –

Session Chairman: B. McEwen
Deputy Minister
Alberta Department
of Agriculture

08:30 **Feed Grains Summary**
Craig Fulton
Agriculture Canada

08:45 **Poultry Outlook**
Don Murray
Agriculture Canada

09:05 **Hog Outlook**
Larry Young
Agriculture Canada

09:25 **Beef Outlook**
Jane Owen
Agriculture Canada

09:45 **Question and Discussion period on Outlook**

10:00 Break

10:15 **Changing Production Structure of Red Meats and Poultry in Canada (i.e. 1986 Census)**
Janice Dyer and Don Murray
Agriculture Canada

Panel Discussion on "Changing Production Structure of Red Meats and Poultry"

10:40 **Poultry and Eggs Discussant**
Garth Coffin
MacDonald College, Montréal

10:55 **Hog Discussant**
Martin Rice
Secretary, Canadian Pork Council, Ottawa

11:10 **Beef Discussant**
Charlie Gracey
Executive Vice-President,
Canadian Cattlemen's Association, Toronto

11:25 **Panel and Question Period**
All Speakers

Rapporteur: C. L'Ecuyer, Agriculture Canada

GRAINS AND OILSEEDS

– Sussex Room –

Session Chairman: The Honourable
Charles Mayer
Minister of State for
Grains and Oilseeds

08:30 **Chairman's Opening Remarks**

08:35 **Wheat Outlook**
Patti Miller
Agriculture Canada

08:50 **Coarse Grains Outlook**
John Irvine
Agriculture Canada

09:05 **Oilseeds Outlook**
Hans Duncker
Agriculture Canada

09:20 **Developing a Grain and Oilseeds Strategy**
Terry Harasym
Agriculture Canada

09:35 **Questions and Comments**

09:50 Break

10:10 **Review of Outlook and Current Internal Adjustments By Major World Grain Trade Participants**
William DeMaria
International Wheat Council

10:30 **Argentina's Perspective On Grain Sector Internal Adjustments**
Manuel Otero
Argentina Embassy in Washington

10:50 **EEC's Perspective On Grain Sector Internal Adjustments**
Ian Grant
President of National Farmers Union of Scotland

11:10 **Current and Future Directions For The Canadian Grains Sector**
Clay Gilson
University of Manitoba

11:30 **Questions and Comments**

Rapporteur: D. Fenety, Agriculture Canada

MILK AND DAIRY PRODUCTS

– Room 103 –

Session Chairman: D. Dewar
Deputy Minister
P.E.I. Department
of Agriculture

09:00 **Agriculture Canada Situation and Outlook**
Maryse Côté
Agriculture Canada

09:40 **Response to Outlook**
Alvin Jory
Ontario Ministry of Agriculture and Food

10:15 Break

10:30 **Structural Change in Dairy Production: Past Changes and Future Direction**
Richard Doyle
Executive Secretary,
Dairy Farmers of Canada

11:00 **Structural Change in Dairy Processing, Distribution and Retailing: Past Changes and Future Directions**
Kempton Matte
President, National Dairy Council

11:30 **Questions and Discussions**

Rapporteur: R. Tudor Price, Agriculture Canada

HORTICULTURE AND SPECIAL CROPS

– Rideau Room –

Session Chairman: G.A. MacEachern
Deputy Minister
British Columbia Department
of Agriculture and Food

08:30 **Market Outlook for 1988 and Beyond**

Fruit: Fred Marshall
President
B.C. Tree Fruits

Vegetables: Michel Legault
Farmer, Past President of
the Canadian Horticultural Council
Québec

Pulses: Don Tait
President
Western Pulse Growers Association

Forage: John Winch
Forage Consultant

Commodity Overview: Nelson Longmuir,
Agriculture Canada

09:45 **Question and Discussion Period**

10:00 Break

10:30 **Structure Changes As They Affect Horticulture and Special Crops**
Maureen Farrow
President
C.D. Howe Institute

11:15 **Question and Discussion Period**

Rapporteur: H. Davidson, Agriculture Canada

FARM COSTS AND INCOME

– Centennial Room –

Session Chairman: G. Gartner
Deputy Minister
Manitoba Department
of Agriculture

09:00 **Farm Structure and Farm Income Level**
L. Auer
Economic Council of Canada

09:30 **The Changing Role of Off-Farm Income**
Ray Bollman
Statistics Canada, and
Pamela Smith
University of Regina

10:00 **Questions and Discussion**

10:30 Break

10:50 **Provincial Income Outlook**
Wayne Jones
Agriculture Canada

11:15 **Input Situation and Outlook**
Tom Wise
Agriculture Canada

11:40 **Questions and Discussion**

Rapporteur: R. Eyvindson, Agriculture Canada

FOOD

– Gatineau Room –

Session Chairman: A. Jarnufzkiewicz
Assistant Deputy Minister
Quebec Department
of Agriculture,
Fisheries and Food

09:00 **Outlook For Food Prices**
S. Barewal
Agriculture Canada

09:20 **Outlook for Food Processing and Retailing**
P. Cooper
Agriculture Canada

09:40 **Discussant**
K. Grier
Ontario Ministry of Agriculture and Food

09:50 **Questions and Discussion**

10:00 Break

Structural Change in Food Processing and Distribution

10:30 **A North American Perspective**
J. Connor
Purdue University

10:50 **A Canadian Perspective - Food Processing**
D. Jarvis
Grocery Products
Manufacturers of Canada

Food Retailing
J. Auger
Canadian Council of Grocery Distributors

Foodservice
D. Needham
Canadian Restaurant and Foodservice Association

11:30 **Questions and Discussion**

Rapporteur: B. Davey, Agriculture Canada

THE FAMILY FARM AND THE FUTURE OF CANADIAN AGRICULTURE

– Colonel By Room –

Session Chairman: R.C. Bailey
Assistant Deputy Minister
Agriculture Development Branch
Agriculture Canada

08:30 **Opening Remarks**
The Honourable John Wise
Minister of Agriculture
Agriculture Canada

08:40 **Agricultural Prospects and the Family Farm**
Clay Switzer
Deputy Minister
Ontario Ministry of Agriculture and Food

09:00 **The Farm Family - Stresses and Strategies**
Norah Keating,
University of Alberta
Edmonton

09:20 **Women in Farming**
Dorothy Middleton,
President
Women for the Survival of Agriculture

09:40 **Questions and Discussion**

10:00 Break

Round Table: The Farm Family and The Future of Canadian Agriculture

10:15 **Presentation on Family Farm Forum**
Des Doran
Agriculture Canada

10:35 **Provincial Government Discussant**
Jack Drew
Deputy Minister
Saskatchewan Department of Agriculture

10:45 **Farm Organization Discussant**
Brigid Pyke
President
Ontario Federation of Agriculture

10:55 **Women's Group Discussant**
Monique Bégin
Présidente
Le Comité provincial provisoire des femmes en agriculture Québec

11:05 **Agricultural Policy Discussant**
Michelle Veeman
University of Alberta
Edmonton, Alta.

11:15 **Questions and Discussion**

Rapporteur: A. Gauthier, Agriculture Canada

PLENARY SESSION I

Opening Address

*Honourable John Wise**

Welcome to the 53rd annual Outlook Conference. The theme for this year's conference is "The Changing Face of the Agriculture and Food Sector." Change is inevitable in any sector. But whether it is a positive or negative force depends largely upon how it is managed.

To manage change effectively, you need good, reliable information. In agriculture today, information is as crucial to the success of a farm operation as any other input. That is why you are here today – to harvest information that you can put to work.

At this conference, my department will provide analyses of the current situation and will take a look down the road at the prospects for Canadian agriculture. There will be also ample time devoted today and tomorrow to discussion of how Canada's farm sector can adjust to changing conditions and how it can maintain its competitive position.

"The best of times, the worst of times" pretty much sums up the situation in Canadian agriculture. The livestock sector has enjoyed strong prices, and the forecast is generally optimistic. The beef industry in particular has enjoyed a banner year and is looking forward to continued strong cattle prices and low feed bills. Increased hog production will put downward pressure on prices in 1988 but the sector should remain profitable. Poultry producers can anticipate significant gains in consumption next year as chicken and turkey continue to receive high marks from consumers. The dairy industry will remain in solid shape financially. The industrial milk quota was fixed at the same level as it was a year ago, reflecting the market's stability. Generally improved economic conditions and aggressive promotion may even stimulate consumers to buy more high-end products such as specialty cheeses and yogurt.

On the other side of the coin, grains and oilseeds still face exceedingly low prices. However, there is a glimmer of optimism in the forecasts. Wheat prices are finally expected to bottom out in 1987-88 and to start on a path to recovery in the following crop year. There will continue to be large supplies of coarse grains worldwide in 1987-88, and prices are not expected to change much from current low levels. But the outlook is improved for 1988-89 when reduced stocks should help strengthen prices. As everyone in this room is aware, the European Community and the United States have locked horns in a bitter subsidy war that has depressed prices for grains and oilseeds. Not since the 1930s have prices been as low as they are today.

At this conference last year, I vowed that Canada was not going to be pushed around. I said there was no way we would back off from our markets because of this trade war. And we have not. Our grain marketers have kept a tight grip. In fact, this year Canada set a new record for volume of grain exports despite the competition.

Recently, I visited China on a trade mission. This country has been targeted by the U.S. for grain sales under its Export Enhancement Program. Even so, China imported a record amount of Canadian wheat this year. I was told by Chinese trade officials that, all things being equal, Canadian wheat is their number-one choice. They cited the consistent quality of our wheat and the longstanding friendly relations between our countries as the reasons why they would rather do business with Canada.

Consistent quality and an international reputation for reliability have made it possible for Canada to increase grain export volumes this year. That is reason to be proud – and reason to face the future with confidence. When this subsidy war is over, Canada will be there when the smoke clears. I promise you that. Through these difficult times, Canada has been a voice of reason. We have used every possible forum to champion fair trade.

We have been active in the Cairns Group, an informal association of 14 developed and developing nations that are working together to promote fairer and freer trade. The Prime Minister has pressed world leaders for agricultural reforms at summit meetings in Tokyo and Venice. And Canada helped shape the principles endorsed by the Organization for Economic Cooperation and Development in Paris last spring. The OECD called

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**Minister of Agriculture.*

for collective action to freeze and to gradually reduce trade-distorting measures and to make national farm programs more market neutral.

All these efforts have set the stage for the current multilateral trade negotiations (MTN) in Geneva. It was considered a significant victory just to get agriculture on the MTN agenda. Now that countries are tabling their opening positions, there is a growing optimism that participants are prepared to work together toward meaningful reforms.

This government has used every opportunity to improve and to secure access for Canada's agricultural exports. Of critical importance is access to the United States – the largest, fastest-growing and most diversified market for our agricultural exports.

We now have reached a trade agreement with the U.S. that will benefit both our countries. It is a good deal for Canada. And it is a good deal for Canadian agriculture. For example, we insisted that a binding dispute-settling mechanism must be part of any trade agreement, and we got it. This will guarantee the impartial application of anti-dumping, countervail and other trade remedy laws. The law, not political pressure, will govern trade between our two countries.

I am pleased agriculture was a significant part of the overall trade agreement. The government recognizes agriculture is important to Canada, and trade is important to agriculture. The agri-food industry generates a full 10% of all economic activity in this country. Directly and indirectly, it is responsible for about 1.6 million jobs. Most sectors of our farm economy could not survive without trade. Nearly half of our $20 billion in farm cash receipts is derived from export sales. Farm exports to the U.S. totaled $2.7 billion in 1986, representing one third of all agri-food exports.

Without a trade deal, trade opportunities with our largest customer could have been swept away in a tide of protectionism. Instead, the deal will give us duty free and more secure access to the U.S. market for our major agricultural exports. After it is ratified by both countries, the trade agreement will take effect January 1, 1989.

The agricultural package in this agreement delivers on the commitments this government made to farmers. We assured producers that their marketing systems were secure. We kept our promise. Supply management marketing boards for milk, poultry and eggs are intact. Import controls – the underpinnings of those systems – remain in place. Canadian agricultural policy is made in Canada. The trade agreement is not going to change that.

Our red meat industry, whose largest export market is the U.S., has hailed the trade agreement. In recent years, annual red meat and live animal exports to the United States have totaled more than $1 billion.

In 1986, there were 156,000 beef operations in Canada. These operations generated an estimated $3.6 billion in cash receipts. Exports of beef and beef products to the U.S. that year totaled $372 million. The Canadian Cattlemen's Association knows the importance of a free trade agreement and says it "whole-heartedly endorses" the deal.

Pork production in Canada last year was a $2.1 billion business at the farm gate. Exports of pork and pork products to the U.S. were worth $629 million. It is no surprise then that the Canadian Pork Council said Canada must do everything in its power to "make sure that the doors are kept open" to the U.S. market.

With no trade deal, the U.S. can limit Canadian meat exports either through formal import quotas or so-called "voluntary" export restraints. Under the agreement, meat will be exempt from restrictions under import legislation on both sides.

The Alberta Wheat Pool has said benefits to the livestock industry will result in spin-offs for grain producers. The Pool stated: "If the promises of guaranteed access to U.S. markets for livestock producers become a reality, there could be more livestock production in Alberta that would build a bigger market for feed grains." With respect to grain trade, Canada's requirement for import permits for wheat, oats and barley will be eliminated when – and only when – total levels of government support in both countries are equivalent for each commodity.

Canadian products such as canola oil, high-quality oats, malting barley and wheat are in demand in the U.S. The removal of U.S. tariffs on these products will benefit our producers. Exports of grains, oilseeds and their products to the U.S. were already worth $503 million in 1986. Under a free trade agreement, there is tremendous potential for expansion in this market. The Canola Crushers of Western Canada recognize this potential. They have welcomed the free trade deal as "the opportunity to trade in a market 10 times larger than Canada's."

Of course, many agricultural products are going to find increased market opportunities in the United States. It will take some good old-fashioned entrepreneurial effort. But I believe the Canadian agri-food industry is resourceful and it will take full advantage of the opportunities presented by free trade.

When the government announced that we were going to seek a trade agreement with the United States, we told farmers that it would be a good deal, or it would be no deal. It was a commitment this government made to farmers. We got a good deal.

As I noted, this government recognizes the importance of the agri-food industry. As evidence, you only have to look at the dollars we invest in agriculture. My department's budget was just over $1 billion dollars when I became Minister in 1984. Now it is approaching $4 billion. Over 525 agricultural initiatives have been taken since 1984, totaling nearly $6 billion. We have responded to the current financial situation with farm fuel tax rebates, an interest rate relief program and commodity-based loans. We set up farm debt review boards to keep efficient and productive producers on the land. We established the Rural Transition Program for producers who had no choice but to leave farming.

We have made substantial contributions to crop insurance and stabilization programs. Just last month, the government announced a final payment of $693 million under the Western Grain Stabilization Act. This brought the total payout to a record $1.4 billion. And earlier this month, I announced that stabilization payments to grain producers in eastern Canada will total $170 million.

The federal government provided $1 billion this year to grain and oilseed producers who have been caught in the crossfire of the international trade war. Through no fault of their own, they have seen their prices tumble to the lowest levels in 50 years in real dollar terms. To help ease the impact of the trade war, almost 200,000 producers received benefits from the Special Canadian Grains Program. It was the largest single agricultural initiative in this country's history. Unfortunately, the conditions that precipitated the program still exist. Prices remain at historically low levels.

This government has affirmed repeatedly that we are going to stand by producers and to help get them through these tough times. We are prepared again to make good on this commitment.

In the months leading up to this Conference, we have met with farm leaders and have listened to their proposals for special federal assistance. They have told us grain and oilseed producers need help. And we are going to deliver that help. Tomorrow afternoon, the Prime Minister will be here to make a special announcement about federal assistance to farmers. Following this announcement, my department will make available 1988 income forecasts.

The Prime Minister's announcement tomorrow will be further affirmation that Canada is in agriculture for the long haul. This government is investing in agriculture's future – for the good of the industry and for the good of the country.

This Conference is about the future. We are looking at what lies ahead so we can take steps today to meet the challenges of tomorrow. I wish all the participants the very best for a successful conference. Good farming.

Canadian Economic Outlook

*M.C. McCracken**

REAL ECONOMIC GROWTH

Economic growth in 1987 was 3.5% to 4.0%, somewhat better than the estimate of 3.3% in 1986. A surprisingly robust consumer, improved trade performance, stronger residential construction, and expanding business investment offset the slower growth in government. Oil and gas investment declines continue, but are much less than in 1986.

Growth in 1988 will drop slightly to about 2.5% to 3%. Slower consumption and residential construction growth reflect the weak expansion of real disposable incomes. Increases in net exports and business investment are a plus. Energy investment will turn around and will contribute to economic performance.

Economic expansion during 1989-91 will weaken, with two of the three years registering below potential growth. Most sectors will expand slowly, except for exports, which will grind to a halt, reflecting a U.S. recession in 1989-90. This will be recorded as a recession, not necessarily a severe one.

INFLATION

Inflation in 1987 continued to be modest; the CPI increased by about 4.5% in 1987, compared with 4.3% in 1984, 4% in 1985 and 4.2% in 1986. Lower natural gas prices and an appreciating dollar helped to offset higher oil prices and the effects of sales tax increases.

CPI growth in 1988 will increase to slightly below 5%, reflecting a rise in import prices, higher unit labor costs in Canada and higher indirect taxes (telephone tax).

Inflation during 1989-91 will remain near 4%. Slack labor markets and some modest appreciation of the dollar will all help to maintain low inflation rates. If a major new indirect tax system is introduced, then we will expect a one-time shock on CPI index.

UNEMPLOYMENT

With employment gains in 1987 of about 320,000, the unemployment rate declined to 8.9%, compared with 9.6% in 1986 and 10.5% in 1985.

Little progress is expected in 1988. The unemployment rate will average about 8.5% for the year; this implies a modest rise from current levels (8.2% in November 1987).

With weaker economic growth, unemployment will rise during 1989-91. Slower labor force growth may help contain the rise but unemployment rates of more than 9% are to be expected.

INTEREST RATES

Interest rates in 1987 declined relative to 1986 averages. Short-term commercial paper rates averaged above 8% but by the end of the year were closer to 9%. Real interest rates remained high. The spread between Canadian and U.S. short-term rates was more than 200 basis points.

Short-term interest rates in 1988 will muddle along at current levels, with any U.S. upward pressure held back by election concerns. The Canada-U.S. differential will narrow to below 200 basis points.

Short-term and long-term interest rates during 1989-91 will remain around 8% and 10%, respectively. The spread between Canadian and U.S. rates will narrow to less than 100 basis points. Real interest rates will continue to decline. Some increase in U.S. interest rates will be one of the reasons for their recession.

FEDERAL BALANCE

The federal deficit in 1987 dropped to about $23 billion on a National Accounts basis as revenue-raising measures and expenditure cuts took effect. Lower interest rates helped to control interest costs.

Continued restraint and additional tax measures from recent budgets will lead to sizable

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**President, Informetrica Limited.*

deficit reductions in 1988 to levels lower than any since 1982 (National Accounts deficit of $17 billion is possible).

Progress on deficit reduction during 1989-91 will be arrested by the timing of cash outlays from the tax reform package in early 1989 and the cyclical slowdown in late 1989 and early 1990. The debt/GNP ratio will stabilize, with primary surpluses offsetting the drag of growing interest payments.

EXCHANGE RATES

The Canadian dollar bottomed out early in 1986, and averaged about 72 cents U.S. for the year. In 1987, the annual average was about 75 cents, an appreciation of more than 4%. At the same time, along with the U.S. dollar, the Canadian dollar has depreciated substantially vis-à-vis other major world currencies (15% to 20% against the Yen and Deutschemark since the end of 1986).

The Canadian dollar may appreciate slightly, approaching 77 cents on average for the year 1988. Some depreciation with the rest-of-world will continue along with the U.S. dollar.

Adequate inflation performance, rising resource prices, and some improvement in the external balance during 1989-91 will lead lead to continued modest appreciation of the Canadian dollar. This appreciation will leave exchange rates with other world currencies stable.

CURRENT ACCOUNT

A deficit of about $8-9 billion is expected for 1987; this compares with about $9.3 billion in 1986. Some improvement in the merchandise balance was offset by further weakening in the services account.

With the U.S. pickup and the relative weakness of the Canadian consumer, the current account will improve to less than a $6 billion deficit in 1988.

The current account will deteriorate as a result of external weakness in 1989. The resulting modest domestic growth and an expansion of exports in 1991 will lead to subsequent improvements.

TABLE 1 REAL ECONOMIC GROWTH BY PROVINCE

	Percentage change		
	1987	1988	1989-91
Canada	3.7	3.2	2.4
Newfoundland	1.6	3.5	2.1
Prince Edward Island	1.2	1.4	1.8
Nova Scotia	2.0	2.7	1.9
New Brunswick	3.3	3.1	2.4
Atlantic Canada	2.3	2.9	2.1
Quebec	5.0	3.5	2.5
Ontario	4.8	3.4	2.6
Central Canada	4.8	3.4	2.6
Manitoba	2.4	3.3	1.8
Saskatchewan	1.3	3.4	2.3
Alberta	0.7	3.5	2.2
Prairies	1.2	3.4	2.1
British Columbia	2.9	1.8	1.5
Territories	2.9	6.5	1.9

Source: Informetrica Ltd. (December 10, 1987).

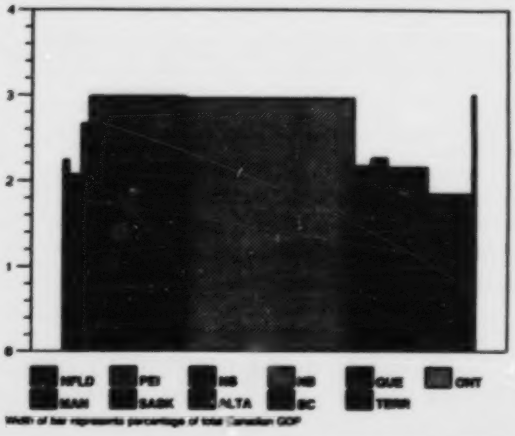
TABLE 2 OUTLOOK

Forecast Uncertainties
- Stock market effect on wealth
- Consumer confidence
- Business confidence
- World oil prices
- Rest-of-world growth

National Economic Issues
- Canada-United States free trade agreement
  - tariffs
  - non tariff barriers
  - energy
  - non economic
  - adjustment policies
- Tax reform - Phase one
- Tax reform - Phase two
- Monetary policy
- Fiscal policy

A Major Recession in 1988?
- The setting
- What has happened post-crash?
- One scenario - the bad one!
- The fundamental imbalances
- What to monitor in Canada?
- What to do?

FIGURE 1 AVERAGE ANNUAL RATE OF GROWTH OF THE CANADIAN ECONOMY, 1987-91 (Millions of 1971 dollars)[1]



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[1] Width of bar represents percentage of total Canadian GDP.

An Overview of the Changing Structure of the Agriculture and Food Sector

*Jean-Jacques Noreau**

As was mentioned earlier at this Conference session by both Wayne Easter and Mike McCracken, Canadian farmers have an enviable reputation for productivity and for the quality of their crops and livestock. This reputation is a reflection of continuing adaptation by themselves of their ability to adjust to changing conditions, to new technologies and to worldwide market demands. The challenge facing industry today is to adapt to a changing environment in order to remain competitive. The challenge facing government is to respond in innovated ways, hopefully, that will assist the industry in this adjustment process. It is for this reason that structural change was chosen as the theme for this year's conference.

Various papers in the concurrent sessions will deal in more detail with structural issues in specific sectors of the industry. Let me lead off the discussions by trying to provide you with a little food for thought.

In my view, there are three characteristics that capture fairly well the current structure of Canadian agriculture. First, it is dynamic; second, it is diverse; and third, it is increasingly integrated, both within the industry and within the general economy.

The structure of our industry is constantly changing in response to market and other conditions. For example, in the last five years the number of census farms, as you know, declined by more than 25 000 because of large movement into and out of farming. At the other end of the food chain, there has been significant restructuring in the grocery retailing sector. It has become concentrated over the last two decades with fewer independent food stores and with only two or three retail food store chains active in each regional market.

There has been some dramatic restructuring in some parts of the food processing sector. For example, the number of dairy processing plants has dwindled to only 25% of the number compared with the ones we had in the 1960s.

Another indication of change in Canadian agriculture is the decline in the number of grain elevators. Today there are fewer than half the number that we had just 10 years ago.

Our competitiveness will depend on our ability to keep up with these types of changes and also changes in consumer demands, market prices, and input costs. We will need to make adjustments to production practices and marketing strategies.

Governments on their part must constantly reassess and review research priorities and extension activities as well as farm income, farm credit, tax policies, in light of changing industry needs.

Canadian agriculture is dynamic and varied. A single model of Canadian agriculture no longer exists. There are more and more exceptions to the average traditional family farm.

In the 1986 census, about 20% of farms reported sales of less than $5000. Another 20% reported sales of more than $100 000.

The trend is toward larger and larger specialized farms. An increasing number of farmers work part time and have jobs off the farm.

There are other examples of this increasing diversity in the food distribution and input manufacturing sectors.

It is becoming much more difficult to offer programs and policies based on the general requirements of an "average" farm or "typical" situation. Governments must develop their programs carefully if they are to achieve the results intended.

We must realize that there are basic major differences between beginning farmers and solidly established farmers, between heavily indebted farms and farms with little debt, between part-time producers and large commercial enterprises.

Beyond the farmgate, the pace of integration has continued. Retail chains are becoming increasingly linked to – and dependent upon – other sectors of the agri-food system, including wholesaling and processing. Vertical integration reaching from the retail sector to the farmgate is

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**Deputy Minister, Agriculture Canada.*

still relatively rare, but a new fact of life is the interdependency of agriculture with the rest of the economy.

One popular misconception about modern agriculture those of us in the sector must combat, I think, is that farmers are highly independent entrepreneurs whose fortunes are dictated solely by their own management skills and by the generosity of mother nature.

The reality is that their economic well-being is highly dependent on a number of factors over which they at times have very little control. They are relying heavily on purchased farm input, they require substantial capital invest-ment, they make greater use of debt financing, and they often supplement their farm income with off-farm employment.

Producers are therefore more likely to be affected by changes in monetary and fiscal policies, farm input costs and availabililty, and the market impacts of international agriculture and trade policies, to say nothing of fluctuating exchange rates.

International agriculture and trade policies, financial conditions and technological innovations are major components of the changing environment to which the sector must adapt. One of the causes of current farm financial problems is the worldwide subsidies that have stimulated agricultural production above market requirements, particularly for grains.

Sustained economic recovery for much of the farm sector is critically dependent upon reaching international understandings and agreements on agricultural trade rules and associated domestic policies.

International agreements that would freeze or reduce production incentives, rationalize supplies and reform trade practices on a multilateral and multicommodity basis may or may not be achieved. This still raises a number of issues which the industry must address:

- What changes in farm production and management practices are required to maintain our competitiveness in world markets?
- What opportunities will open up or are opening up for increasing our market share with existing trading partners and for developing new markets?
- How can the food sector respond in order to capture more of the foreign value-added food market?
- How can Canadian processing plants access the larger North American markets?

The abrupt change in the financial situation of farmers was a source of tension and concern and put the survival of many farms at risk. These problems were unheard of in the past.

Today 35% of agricultural cash receipts go to service the debt, compared with 20% barely 15 years ago.

In some sectors of production, such as grains, income is low. Land values are falling everywhere.

Many operators have had to adapt financially to this new situation, and it is expected that others will have to do the same. Nevertheless, global debt remains too high. A number of farms are on the verge of bankruptcy. Farms in financial difficulty will continue to discuss with their creditors ways to find solutions that will enable them to survive.

Fortunately, interest rates are now well below their earlier peaks. In many sectors, income levels are fairly high. Grain prices seem to be stabilizing and there are indications that total farm debt is starting to fall. The general forecasts we were shown earlier in this Conference session are moderately optimistic for the next two or three years.

Although we are starting to see a little light at the end of the tunnel, it is unlikely that farm financial difficulties will be resolved over the short term. In the light of this, one may ask how Canadian agriculture, the food industry and governments will approach these problems in the years ahead:

- Should new programs or policies be developed to get the next generation to take up farming?
- Should we invite more or fewer young people to take up farming?
- Should we develop programs and policies to ease present farmers into retirement or early retirement?
- Should we change programs and policies to take account of a projected increase in the number of part-time producers? Should we encourage or discourage part-time farming?
- How can the rest of the food system (input suppliers and farm communities) help the agriculture sector remedy its financial situation?

Technological change is agriculture over the past few decades has had a significant impact on the industry. We all know that. Looking ahead, most of the technology that should be widely adapted by the year 2000 is now in the advanced stages of research or in the early stages of adoption.

In the farm sector there will likely be a shift from the capital intensive technologies toward management intensive technologies on the farm such as:

- integrated pest management;
- improved crop varities in livestock breeds through genetics and biotechnology; and
- microelectronic monitoring of crop harvesting, animal feeding, and environment control functions.

The focus is likely to be on cost reduction strategies, alternative crops and quality enhancement. Increasingly, research and the ensuing new technologies are likely to be influenced by environmental issues and changing consumer tastes and preferences, including health concerns, both in domestic markets and abroad.

These concerns will impact on the food sector as much and perhaps even more than on the farm sector. New products and processing technologies will have to be developed and introduced to ensure the agri-food industry remains competitive in meeting changing consumer demands. Examples include marketing of organically produced food; aseptic or bacteria-free and modified atmosphere packaging for extensive shelf life; microwaveable products for increased convenience; and changes in packaging for environmental reasons.

Anticipated changes of a technological nature raises questions:

- Is the industry ready?
- Would it have to become more aggressive in its market research and development to remain competitive?
- Will farmers, despite their current financial problems, have to devote more time and more energy to implementing new management techniques?
- Will government research and extension and training programs need to be modified?

I have talked so far about the importance for the Canadian agriculture and food industry to adapt to a changing economic environment.

I have also dealt with a number of changes that may be required of Canadian farms and enterprises. However, adaptation of the agriculture sector is not based solely on the sector's ability to make demanding economic decisions.

The family farm is an integral part of the rural community. It is more than an enterprise. The social dimension is as important as the economic dimension in the process of family farm adaptation.

This idea emerges from the Family Farm Forum's report on the family farm, which has just been released and which will be discussed later at this Conference. The document is based on answers to a questionnaire distributed to farm families across the country.

Questions such as environmental protection, retirement, transfer of the family farm and farm safety are very important to farm families.

Likewise, child care, stress and workload are major concerns for those who live on the farm.

The ability of farm families to adapt to new situations is influenced by all of these factors. It is therefore appropriate to have for the first time a session at the Outlook Conference dealing with the family farm and the future of Canadian agriculture.

This variety of issues, of course, has an effect on government activities.

Agriculture Canada is trying to take an active developmental role in ensuring that the industry remains competitive and resilent. At the same time, we are striving to maintain an economic and policy environment supportive of the family farm and protective of our agricultural resources and natural environment.

How can we in government increase our effectiveness in achieving these objectives? We are trying to ensure the appropriateness of our research programs, regulatory activities, income stabilization and regional development assistance by consulting, by talking with and listening to the industry and provincial governments, by discussing problems and solutions, and by fine tuning programs and policies, be it in the context of the National Agricultural Strategy, the development of commodity strategies, the agricultural sub-agreements under ERDAs, or the Family Farm Forum.

We think we have to follow a flexible and innovative approach to such vital issues as: trade negotiations, farm income stabilization measures, farm financing assistance programs and technology transfer.

I hope these questions and issues will help stimulate some discussion. And as Mike McCracken said this morning, "I hope we can keep collectively our eyes on the road and avoid a big big traffic accident."

Thank you.

Implications of the Future Directions of the Agriculture and Food Sector

*Don Knoerr**

How does a farmer view structural change? When I think about that question, the first thing that comes into my mind is an image of a large commercial office building and the problems faced by the owner when trying to meet changing market demands.

This does not sound much like an agricultural image, does it? But it is really not that far off. Every facet of agriculture changes over time. And it is not hard to find examples of that change. All I have to do is to think of what my grandfather's farm looked like at the turn of the century and to compare it to a modern farm today.

Not only is the physical appearance of our farms changing, but also the technology we use and how we use it, the crops we grow and how we grow them, and the animals we raise are changing.

Farmers have to adjust to changing consumer demands, to rapidly changing technology, to general forces of the economy and to the competitive pressure they feel not only from other Canadian farmers, but also from farmers in other countries.

In addition to the marked technological and economic pressures, another factor weighs heavily on us as farmers; that is, our own economic and social expectations. Not only does our market environment change, but also society changes and what we expect to achieve from our employment changes with it.

The one constant in Twentieth Century society is change, and there is no reason to believe that the pace of change or the need for farmers to change is going to diminish in the future. In fact, if anything, it is going to accelerate.

I am not going to try today to describe what I think a farm of the future will look like. I do not have great faith in predictions or in long-term forecasting. The agri-food strategy in the late 1970s and the Agricultural Task Force of 1970 did not do a very good job of anticipating what was going to happen to market returns and farm income in the 1980s, and I do not believe that the depressed conditions that many farmers are feeling now gives us a very good picture of the future.

Although I will not try to predict what the situation may be in the 1990s, what I can and will do with a great deal of confidence is to predict that, given adequate tools, farmers will be able to adapt to the changing conditions. The efficiency and productivity of modern farmers and the drop in the real price of food during this century and testimony to their ability to do that.

Canadian farmers have the initiative, the skills and the courage to continue to adapt to change. However, to be able to do so they require an environment that allows them to make decisions about how their own operations will look and function and about how the industry as a whole will look and function.

TOOLS FOR ADAPTING

In this day and age, most economic and business decisions are made within the framework of government policy. It goes without saying that a sound fiscal and monetary policy and perhaps two of the most important elements of any structural development. An overall policy framework with the flexibility to allow change without setting an immutable course is imperative.

I said that farmers will require tools to adapt to changes in structure over the long and short term. I believe there are five very fundamental tools without which any changes will at the very least be difficult.

Agriculture research

Unless Canadian consumers and farmers are isolated from the rest of the world we will have to ensure that Canadian farmers are able to stay at the leading edge of agricultural technology. The alternative would be the loss of our competitive position in a declining industry. Budgetary pressures perhaps have confused the situation of late. Farmers are quite familiar with the phrase

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*President, Canadian Federation of Agriculture.

"as the government we are not going to enter into a research program unless you can prove it is needed."

Farmers and the rest of the agri-food industry must do their share in terms of immediate pressing practical problems. They have a good handle, but the federal government must play a major role, particularly in the area of basic research. It is the scientists and not the farmers who are removed enough for the day-to-day pressures and who have the professional knowledge necessary to provide the leadership to ensure that the required basic research is carried out. A good example can be found in the area of crop protection.

We as farmers are highly concerned about the issue and we try to take steps to ensure that our concerns are heeded when decisions relating to crop protection are taken.

However, we as practical farmers cannot even begin to understand the technology and potential that exist for crop protection. We do not know what is physically possible. We understand our problems, and we know they must be solved, but it is the scientists who have the knowledge to solve them.

Credit and farm finance

Because of the relatively low rate of return to investment, farmers have had to depend on their own funds or debt financing rather than to use outside equity financing. There is little sign that this situation is going to change. Yet the capital investment and operating fund requirements of farms have been increasing. For that reason, it will be even more important that tomorrow's farmers have access to credit under suitable terms. Despite the importance to the industry of private lenders, it is clear that government will have to continue to play a leadership role in ensuring that suitable credit is available to farmers.

I agree very much with the importance that the Ministers of Agriculture in Canada in their strategy document placed on the revitalization of the Farm Credit Corporation. This is perhaps one of the most urgent issues facing government at this time.

Maintenance of our land base

Obviously one of the most important tools we as farmers use is the land on which we produce crops. Government will need to work with farmers to help us farm in a way that maintains the fertility and the health of our soils. In order to ensure that the land base is there when we require it in the future, governments will also need to pay attention to land use planning and the legislative framework in which it operates to ensure that nonagricultural activities are carried out as much as possible on land that does not have a major agricultural value.

Legislative framework

We will continue to need a legislative framework that gives farmers the flexibility to develop marketing systems that best suit the needs of our particular commodities.

Information transfer

Farmers will always need the best market intelligence information that is available and to be kept informed of changing technology. Government extension services play an important role in this area, both at the federal and provincial levels. These services must be kept up to date both in the information disseminated and the method of delivery.

ISSUES TO CONSIDER

So far I have talked about how farmers adapt to changing market and technological requirements and in a sense I have talked about structural change as a reactive process being molded by the forces around us. I have talked about the tools that we need to carry out the necessary changes. But besides reacting to what is happening to use, we also want to make actual decisions about the type of structure we want.

We do not always think of them as structural decisions at the time, but we do make decisions in our society that determine or make judgments about the type of farm structure we want or decisions about the type of social structure we want that influence the farm structure in our country.

I would like to identify some of the areas where we do make those types of decisions.

Family farm structure

Our industry has been described as a family farm industry, and it is certainly true that the vast majority of farms are owned and controlled by individual families. This structure is partially in existence because it is efficient and also because we have made conscious decisions and have established land use regulations and marketing regulations designed to maintain it.

Nature of the rural community

The nature of the rural community is a two-sided issue. The economic success of agriculture is fundamental to the economic survival of many rural communities, so a healthy structure in agriculture is important to maintaining rural stability. On the other hand the types of services that are available in rural communities are important in determining how well farmers are going to be able to meet their social and economic expectations, which are often molded by the types of services that are available in our urban centers. Two simple examples are telephone and rural mail services.

Regional development

We in Canada have a group of policies designed to distribute economic opportunities between all regions of Canada with some equity. Some of our agricultural policies are designed to ensure that there is agricultural activity in development of the less advantaged regions of Canada. This type of policy has to be balanced against the risk of overbalkanization and the loss of economic efficiency in the industry.

Maintenance of our physical resource

In a number of provinces – and I am thinking particularly of British Columbia, Quebec and Ontario – there is legislation designed to preserve agricultural land; this legislation is motivated at least in part by the fact that, because of our climate, we have very limited lands that have the highest agricultural capability in Canada. Experience in this type of legislative environment has shown that it is very difficult or impossible in the long run to maintain and prevent the conversion of that type of land unless it is possible for farmers to make a living from it. For this reason, the maintenance of a structure that permits farmers to profitably farm those types of and is an important structural decison.

Diversity of production

Canada is a major exporter of agricultural products and also a significant importer of agricultural products. While we export up to half our production in any one year, we import perhaps one third of the agricultural products consumed in Canada. Despite this, we have had policies designed to ensure that we continue to maintain a high diversity in the agricultural products that we produce in Canada. The aim has not been to exclude all imports of those products but to ensure that at least some basic production in those products is maintained within our country. The most sensitive area in this regard is horticulture.

Marketing structures

We have made some very conscious decisions about marketing structures for Canadian farmers. We have established supply management marketing boards at the national level, we have provincial marketing boards and we have the Canadian Wheat Board in the Prairies. Now these types of decisions have been made partially in response to market requirements, but they have also been made to mold the type of industry and structure that we have in Canada.

A good example is the poultry industry. Poultry production in North America went through a major technological change in the 1960s. Canadian farmers, like American farmers, adapted to those changes and put a new face on their industry. But we made a conscious decision in Canada that we did not want to go the way of the American industry went. Their poultry production either is concentrated in very large integrated units without a great deal of rational distribution or functions at a high level of vertical integration where the industry is dominated by suppliers rather than by producers. We in Canada wanted to maintain the structure of family-owned operations with a good rational distribution.

Transportation policy

In order to facilitate our regional development goals and to facilitate agricultural development in the Prairies, by assisting export and domestic transportation for the agricultural products produced there, we have had transportation policies in Canada.

We have recently been concerned about market distortion that may result from our transportation policies. This is a legitimate concern. However, before we give them up, we must first examine our reasons for establishing them. What were our goals, and are those goals still valid? If they are, what kind of policies do we need to achieve them?

Other agricultural policies

Farm credit, stabilization programs and other risk-reducing policies are tools that farmers use in adapting to the market requirements and technological changes about them. But decisions in these areas can also be structural decisions, because those decisions determine the opportunity of individuals to enter the industry, to some degree the nature of ownership in the industry, and the degree of financial stability that will prevail in the industry over the long run.

TRADE POLICY

I have given two lists so far. The first list identified tools that farmers need to adapt to changing times. The second list discusses some of the issues we need to consider in order to determine what type of structure we want to maintain or achieve as we adapt to change. I do not know if I have done things in the right order, but I want to convey the thought that, even though we adapt successfully to change, we may not be satisfied with the result unless we think about what type of structure we want to achieve in the end.

Two points that are not on my list so far are the market orientation of policy and the role of trade negotiations in eliminating trade-distorting practices on a national as well as on an international level.

These two questions are so dominant in our current policy discussions in Canada that we are already very conscious of them. Although there are other points I wanted to make today, I will make some comments in this regard. Without doubt, when we are establishing policy in Canada and adapting to change, we have to be sensitive to what is happening in the marketplace. I think, in the main, Canadian farmers over the long run have been market-oriented in their decision. At times we get a little confused about what the market message is and what its implications for us are, but the responsibility has to be shared by the prophets and the advisers along with the farmers.

A particular point I want to make here is related to the role of economics – economics in the sense of a professional discipline. I view economics as a study of market forces and an analysis of what happens in the marketplace when certain factors are present. I do not view economics as a dogma that is going to make our social judgments.

Whatever we want to do with our agricultural structure in Canada, it is important that we understand the economics of the marketplace and that we use this understanding to determine whether our structural goals are realistic. If we determine that those goals are realistic, we must use this knowledge to decide how best to achieve them. But economics cannot and should not be used to try to answer the basic question of what sort of social structure and what sort of agricultural structure we want in Canada.

The trade negotiations are extremely important in Canadian farmers, particularly the aspect of our industry that is highly dependent on exports. We have to recognize this if we are going to expect other countries to eliminate what we consider unfair trade practices. Canadians are also going to have to accept discipline. When looking at trade negotiating policies, however, it is clear that all nations wish to maintain a basic agricultural industry and a security of food supply in their countries. That will also be a factor in negotiations.

I think it is important to remember that even the most successful trade negotiations will not resolve some of the basic problems Canadian farmers have had to cope with over the years. An efficient and effective operating marketplace is not going to eliminate price cycles; in fact, price cycles that run in the opposite direction of supply cycles work in the marketplace to balance supply with demand. Trade negotiations and improved marketplaces are also not going to resolve problems associated with the historical low rate of return that farmers receive for their investment.

In summary, I have started from the premise that the constant in Twentieth Century society is change and that farmers, like the rest of society, have to adapt to changing times. There are tools that we as farmers need to assist us in adapting to changing requirements but, if we want satisfactory results and if we want to have an influence on the type of world in which we live, we also have to make some decisions about what sort of society and structure we want to operate in.

It is up to us as farmers to make the decision and to use our knowledge as a guide as we deal with the forces around us.

PLENARY SESSION II

Grains and Oilseeds Sectoral Outlook

*Brian Paddock**

Ladies and gentlemen, my purpose today is to give you a brief overview of the grains and oilseeds sectors worldwide and to discuss how these sectors relate to Canada, according to the medium-term forecast prepared by Agriculture Canada's Grains and Oilseeds Branch.

It is well known that we have witnessed a considerable buildup in the levels of crop-year-ending stocks worldwide for most of this decade. Wheat stocks reached their highest level ever in 1987 at close to 150 Mt. This represents 28% of worldwide consumption or, to put it another way, almost three and a half months' supply for world consumption.

The situation for coarse grains is equally as startling. Coarse grains stocks in 1987 exceeded 200 Mt for the first time ever. As a share of one year's world utilization, this equals almost 27%. In terms of days of consumption, these stock levels represent 95 days, again more than a three-month supply.

In this current 1987-88 year, we are beginning to see, perhaps, a light at the end of the tunnel. Production of the major grains has fallen and is forecast to fall again in 1988. These declines are in response to such factors as acreage reduction and programs, conservation efforts and adverse weather conditions in major producing areas. Low world price levels for certain grains have also encouraged switching of lands to alternative uses.

Consumption levels for grains have been rising. In part this has been due to rising numbers of grain-consuming animal units. Another cause has been that crops in western and eastern Europe and the USSR were severely damaged by rains at harvest, affecting both quantity and quality. As a result, in 1987-88 the world will see consumption levels of both wheat and coarse grains exceeding production for the first time in several years, with stocks falling as a result.

With declining production levels worldwide, increasing consumption levels and a beginning trend to declining stock levels, one should expect an improvement in the price structure for grains. While most forecasts indicate some slight rise for wheat prices in 1988 and for an even more modest rise for coarse grains prices, these positive market factors are being undermined by the stock management policies being practiced by the European Community and the United States.

It is important to realize the extremely large quantities of world stocks that are currently owned or controlled by government programs. In the United States, government-controlled stocks, which include those owned by the Commodity Credit Corporation (CCC) and those held in the Farmer-Owned Reserve Program, account for 80% to 90% of total stocks. In the European Community, intervention stocks are also substantial. As a result, the accessability of these stocks is of key importance for prices. Currently both the U.S. and EEC are managing their stocks in such a way as to maintain constant pressure on prices. The United States is using government-owned commodities to subsidize exports and to make direct payments to producers. Both of these actions tend to increase market supply and to act as a depressant on prices.

The European Community, it appears, has every intention of matching subsidy for subsidy. The export rebates paid by the European Commission to their traders are, in some cases, two to three times the prices being charged to the buyers of these grains.

Another factor that has now entered the markets is the U.S. Department of Agriculture's selling of CCC stocks at below-market prices. It seems clear that these "auctions" are intended to prevent any sharp upward movement in wheat prices that may occur because of increased market demand.

The market for oilseeds provides an interesting contrast to that for grains. Oilseeds markets are remarkably free of government intervention when compared with the grains sectors. Demand has expanded as a result of increased livestock numbers. The USSR has recently made large purchases of soybeans and soybean meal. Demand for vegetable oils is also on the upswing as the drought in India has lowered its production and has resulted in recent

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*Agriculture Canada.

Indian purchases on the world markets of oils such as soybean oil and canola oil. As a result, U.S. government-held stocks of soybeans have been reported as being sharply reduced and prices have shown considerable strength.

On the Canadian side, supplies of cereal grains are only marginally changed from last year's levels. Historically, these stock levels are certainly not at record levels.

Wheat production in Canada declined moderately in 1987 as producers planted fewer acres and as yields declined to more normal levels compared with the records achieved in 1986. The quality of the 1987 wheat crop is near the 10-year average, and was much improved from that of the two previous seasons when heavy and prolonged rains affected the harvest. Exports of Canadian wheat and durum should match and even exceed last year's high level. Soviet purchases should equal or exceed last year's level of 5.4 Mt. Shipments to China for the first three months of the crop year total 1.7 Mt. This is more than four times exports over the same period last year. The total for all wheat exports to date are running about 2 Mt above last year's pace as there is a steady demand, particularly for high-quality wheat. Prices for this high-quality wheat have been rising, as the supplies of such quality have been declining. Prices for top grades of wheat will be offset by those of the lower grades, which must compete with feedgrains, but it is believed that this year will see the bottom of these cyclical low prices.

Canadian coarse grain production increased to 26 Mt in 1987. Another large barley crop exceeding 14 Mt and a 19% rise in corn output to 7 Mt were the major components of this output. Total coarse grains supplies then rose marginally from the level of the previous year, exceeding 32 Mt. Exports of coarse grains are expected to decline, as it appears barley exports are highly unlikely to be near last year's record 6.6 Mt. During the period to date, barley exports are running 1 Mt below last year's pace, primarily because of reduced sales to the USSR and eastern Europe. Domestic utilization is expanding in response to expanded poultry and hog sectors in Canada.

Prices for barley are at a depressed level as Canadian exports vie for markets with heavily subsidized U.S. and European Community exports. Corn prices are not expected to change significantly this crop year, as supplies in Canada and worldwide remain ample. Prices for oats and rye and even feed wheat, basis Thunder Bay, have risen significantly during the past 6 to 10 weeks and should remain strong well into the spring of 1988.

In the oilseeds sector, production in 1987 increased for soybeans and rapeseed while declining for flaxseed. Overall production increased, resulting in total supplies of 7.3 Mt. Canola accounts for 62% of this total. While it is expected that both domestic use and exports of all oilseeds may decline from last year's level, resulting ending stocks in 1988 will still be only marginally above those of two years ago. Exports to date of flax and canola are virtually unchanged from year-earlier levels and, if this pace is maintained, stocks of canola particularly may be sharply reduced from levels of only two years ago (from 950 000 t to less than 500 000 t). Prices consequently are forecast to rise for all oilseeds in 1987-88, although they may not reach the levels of two to three years ago.

The medium-term outlook for grains and oilseeds involves considerable uncertainty. Volatility in prices and incomes will continue to be a result of international markets in a seemingly constant state of adjustment. Planted acreage for crops is forecast to rise by almost 1% per year for the period. This is lower than the previous trend rate of growth and reflects the currently depressed state of grains prices. Should the initial price ratios between grains change, there could be shifts in acreage between board grains and/or into oilseeds as circumstances dictate. As it now stands, the forecasts indicate wheat production will rise by 6% in 1988 and by 0.3% per year thereafter. In 1988, coarse grains output is forecast to decline by 11%, partly in response to low prices, but thereafter is projected to increase by almost 4% per year. Oilseed production is forecast to decline by 6% in 1988 as lower yields offset higher area, but output is to rise an average of 1% to 2% annually from 1989 to 1992.

World wheat prices are projected to rise moderately over the ensuing five years as world stock levels decline and as supplies are increasingly brought into line with utilization. Canadian wheat prices are forecast to rise by between 2% and 4% per year to 1992-93. Barley prices are forecast to recover moderately. In this same timeframe from 1988-89 to 1992-93, corn prices are forecast to increase each year, averaging a gain of 3% per year. Edible oil prices, while probably increasing somewhat next crop year, have to face expanding tropical oil production and soybean oil production in the medium term.

Canadian Agri-Food Sector, 1988-92

*Frank Claydon**

INTRODUCTION

Economic forces have played a significant role in shaping the Canadian agri-food industry. Market information, both in terms of current and timely data and in terms of outlook information, is a means of anticipating and coping with the pressures brought on by these factors by helping the industry to understand better the nature of the forces at work.

These presentations summarize the outlook for commodities, farm income, food markets and international trade. These overview presentations provide a general appreciation for the outlook for agriculture and will serve as a general basis for the detailed presentations in the concurrent sessions of this Conference.

The purpose of this presentation is to set current conditions and the outlook for the agri-food industry in a medium-term perspective, noting the factors that are at play in basic commodity markets in particular and in the agri-food sector as a whole.

ENVIRONMENT FACING THE CANADIAN AGRI-FOOD INDUSTRY

International and domestic economic conditions and international agriculture conditions shape the direction of change in the Canadian sector. Without discussing these in great detail, two salient points about the medium term are worth noting.

First, economic conditions over the medium term, both foreign and domestic, are expected to foster a higher growth in demand for food than that experienced in the early 1980s but less than that of the 1970s. The growth in demand for food is expected to be moderate and will not provide a major source of growth for agriculture.

For international economies, changes in growth rates for the OECD countries versus the developing countries can be seen in Table 1. Overall, economic growth next year is expected to be moderate, in the range of 2% to 3%. Over the medium term, growth is expected to be marginally higher. Income growth affects import demand. Particularly in developing countries, lower income growth coupled with high external debt positions would imply weak demand for imported commodities. However, the implications of recent stock market fluctuations are not fully understood, and there exists fear that growth could be lower than forecast.

Income growth also affects the composition of the consumer food basket. Higher income growth has led to higher meat consumption than cereal consumption, and this has implications for feed versus food grain trade and for meat trade.

A major uncertainty with respect to the world economic scene concerns future movements in the value of the U.S. dollar. As Figure 1 indicates, the dollar has depreciated considerably, and this can be expected to affect the terms of trade between trading partners. The dollar is expected (although not everyone agrees) to stabilize around current values, but high interest rates associated with the current high U.S. budget deficit will play an important role in determining this exchange rate. Of course, interest rates will also be important to high-debt developing countries in terms of the drain that high interest payments have on their economies.

For the domestic economy, the main features of the domestic economic outlook have been outlined in the article above by M.C. McCracken. It is important to note that income growth, inflation, unemployment, real interest rates and the exchange rate all play an important role in determining conditions for producers and consumers of food. In addition to these, tax reform is expected to create higher disposable income growth in the next two years, which should stimulate the demand for food somewhat. Finally, the free trade agreement is expected to provide stimulus to certain agricultural sectors.

The second important feature of the environment concerns international agricultural conditions. Long-term structural adjustments in agriculture have caused governments to intercede in an attempt to arrest or ease these adjust-ments, with the application of support programs, import controls and direct expenditures. Price supports can create higher supply potential, and lower demand. Import controls limit market access. Direct payments may encourage supply if linked to production levels. In recent years, these have had a major impact on world markets.

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* Agriculture Canada. Staff of the Market Analysis and Outlook Division assisted in the preparation of this presentation.

Figure 2 provides an indicator of this involvement simply in terms of direct expenditures. The growth in spending has been significant; from the start of the 1980s to 1985, direct expenditures in the OECD area increased in nominal terms about 80%. Were more recent data available, this index would be substantially higher, given expenditures related to the U.S. Farm Bill and the consequent competition for world markets. This measure does not purport to measure indirect expenditures or effective barriers to trade that have been put in place.

The simple lesson learned is that, under conditions where demand is not responsive to price movements, attempts to subsidize result mainly in significantly lower market prices, which benefit consumers or importers most; this simple principle is essentially the problem world markets are currently facing.

Evidence of excess capacity in commodity markets can be seen in looking at the EEC butter stock estimates or EEC beef stock figures (Figure 3). These stocks have grown during the 1980s by 80% and 500%, respectively. In general, excess supply on the part of industrialized countries and limited growth in import demand, either because of real economic factors or because of explicit import restriction policies on the part of importers, have caused substantial downward adjustments in prices. As noted by the figure, stocks have recently been reduced somewhat. This reduction is expected to continue.

The excess supply condition in world grain markets that have been developing over the last several years is a main feature of the outlook for world agriculture and is the main feature of the outlook for Canadian agriculture. Note the trend in the stocks use ratio for wheat as shown in Figure 4. We expect that, with recently much lower prices coupled with the acreage reduction measures in the U.S. Farm Bill, this trend will be reversed and that the current excess supply situation for grains generally will dissipate. While prices are expected to improve, they are not expected to attain previous levels. Continuing low prices for feedgrains will eventually lead to lower-priced meat in markets.

AGRI-FOOD OUTLOOK 1988-92

Crops

The external environment as noted, coupled with the structural conditions of the Canadian industry in terms of sectoral marketing systems (supply management versus open market etc., import versus export basis), condition the outlook for the basic commodity sectors.

The main feature of the cereal outlook is that prices appear to have reached bottom during the past year and that price improvement is expected over the medium term (Figure 5). The farm product price index for Canadian cereals is expected to be down about 21% in 1987, compared with 1986 levels, and down about 48% from the historical peak in 1981. The cereals price index is forecast to decline slightly in 1988, but then to increase by more than 4% per year on average from 1989 to 1992. In contrast, the situation and outlook for oilseeds prices in Canada is somewhat different. The farm product price index for oilseeds is expected to decline by 10% in 1987 to a level that is only 25% below the 1981 value, but then to rise by almost 9% in 1988. Oilseeds prices are forecast to decline in 1989, but then to increase in each of the following years, such that the average percentage change from 1989 to 1992 is close to zero. Despite the fact that cereal prices are expected to increase at a faster rate over the medium term, it is evident that they are starting from a lower base; consequently, relative prices tend to favor oilseeds production.

Total acreage of the eight major grains and oilseeds in Canada (wheat, barley, corn, oats, rye, rapeseed-canola, soybeans and flaxseed) increased by 2.4% per year on average over the 10-year period 1977 to 1986. In 1987, however, acreage fell by 2.2% to 24.9 Mha, mostly in response to depressed market prices. Acreage is forecast to rise by 1.5% in 1988, partly in response to somewhat higher prices, but also in response to current lower farm inventory positions. Acreage is expected to increase by almost 1% per year for the four-year period 1989-90 to 1992-93 (Figure 6). Note that the average growth rate over the forecast period is lower than the previous trend rate of growth, reflecting current depressed prices and only limited improvements over the forecast period.

Horticultural crops have not recently suffered excess supplies to the same degree that cereal crops have, but conditions have been volatile nevertheless. Potato production is expected to be reasonably stable, increasing at its trend rate, as shown in Figure 7. Production was about 4% higher this year and is expected to increase at the rate of about 2% to 3% over the medium term, with weather patterns adjusting supplies up and down. Over the medium term, production for apples is expected to grow up to a higher plateau by 1990 (Figure 8). Production this year was up by over 25% and is expected to increase significantly next year as replanted orchards come on stream in Quebec and B.C. The medium-term outlook for apples does not look promising pricewise, as significant production increases in the U.S. and in Europe are expected.

Livestock

As a result of low feeding costs, an expansion phase of the Canadian cattle cycle started in 1986, ahead of expansion in the U.S. industry. The reason for this is that barley feeding in western Canada has been relatively less expensive in the last year or two relative to corn feeding either in the U.S. or in eastern Canada.

Following the course of steer prices in the U.S., the Canadian steer prices are expected to increase only marginally in 1988, after increasing by almost 7% this year. These prices are expected to remain remarkably flat over the medium term, even in the presence of an expansion phase taking hold (Figure 9). Normally, at the outset of an expansion phase, finished steer prices increase dramatically as supplies of breeding cattle are cut back. However, high supplies and/or lower prices of competing meats are containing increases in finished steer prices. As the feeder steer price movement indicates, the expansion phase is being fueled by currently lower feedgrain prices and not by higher fed prices.

Current high prices for feeder calves is causing retention of breeding stock, implying fewer slaughter heifers and cows. Consequently, farm output of beef is expected to fall again next year in the 3% range after falling by about 6% this year. Output is expected to start increasing in 1989 and to continue to increase at a 3.8% average annual rate to 1992 (Figure 10).

In the hog sector, following the lead of U.S. prices as noted earlier, hog prices in Canada are expected to fall by over 20% in 1988, after posting two strong years in which profitability has been at record levels. The hog/corn price ratio reached record levels in 1987. Over the medium term, hog prices are expected to follow a usual cycle and to turn back up by 1990 (Figure 11). It bears noting that volatility in this sector has been and will continue to be significant, adding to uncertainty for producers.

Canadian pork output turned around in 1987, and is expected to be up 9% in 1988, as a result of the profitability conditions in the past two years (Figure 12). This turnaround has preceded that of the hog production cycle in the U.S. and, by consequence, pork exports to the U.S. are currently at historically high levels. Again the relatively low price of western barley has encouraged expansion in western Canada. Over the medium term, exports are expected to subside somewhat as the hog production cycle turns down.

In the regulated sectors, the poultry sector is expected to continue expansion. Growth in demand for chicken and turkey in particular has caused continued upward adjustments to quotas, and growth in production of these meats has significantly outstripped growth in red meats. Chicken output is expected to grow by over 5% again in 1988 and to continue this growth throughout much of the medium-term period (see Figure 13); production of turkey meat is expected to be similarly robust, albeit at a lower pace. Farm prices of these products follow cost-of-production formulas and are expected to increase marginally over the medium term.

In the dairy sector, total milk shipments are expected to increase by almost 1% in calendar year 1988, and by a similar yearly amount over the medium term, as shown in Figure 14. Fluid milk shipments are expected to expand further next year and to increase on average by about 1% over the medium term, reflecting stable per capita demand and growth in population. The highlight for the dairy industry is that, over the medium term, overall consumption of industrial milk is expected to grow, albeit marginally, as growth in cheese in the 4% to 5% range begins to dominate the average 2% to 3% yearly falls in butter consumption.

Aggregate farm conditions

The overall index of farm product prices in Canada is expected to fall by 3.3% for calendar year 1987, which is the third consecutive year of decline. A further decline of 1% to 2% is forecast for 1988, but then recovery is to begin, with increases averaging about 2% for each year from 1989 to 1992.

Figure 15 shows the overall farm product price both in nominal terms and real terms (deflated by the CPI). Since 1950, real prices for farm products have trended downward (except for a brief upturn in the 1970s) and, despite a projected recovery in nominal farm prices from 1989 onward, this downward trend in real prices is forecast to continue over the medium term. The downward trend in real farm prices points to pressures at play that induce structural adjustment. Higher real prices in the 1970s may have bucked the trend, but it appears that the downward process has resumed.

Figure 16 shows the contrasting movements of crops and livestock prices. Depressed crop prices have been the major cause of declining overall farm prices in recent years. In 1987, for example, the farm product price index for all crops was expected to fall by 13%, whereas the index for total livestock should actually increase by almost 3%, largely on the basis of stronger prices for cattle and calves. However, in 1988 the trend is projected to be reversed: average crop prices are forecast to increase marginally by about 1%, but livestock prices are forecast to be down about 3% because of sharply lower hog prices. Over the four-year period 1989 to 1992, crop prices are forecast to increase each year, averaging gains of 3% per year, while livestock prices are projected to rise in each year except 1992 (when hog prices again suffer a downturn), averaging gains of 2% per year.

Combining price and production forecasts for all commodities results in projections for cash receipts exclusive of government programs such as WGSA, crop insurance, ASA, Special Canadian Grains Program, etc. A measure of real market cash receipts is obtained by deflating nominal receipts by the all items consumer price index. This measures the purchasing power of market receipts in terms of constant consumer basket of goods. Real market cash receipts in Canadian agriculture are expected to fall by about 8% from 1986 levels and to be down almost 30% from the peak value reached in 1981. For 1988, a further decline is projected; however, from 1989 to 1992, real market cash receipts are forecast to increase by an average of 1% per year.

Figure 17 notes the long-term trend in real market receipts, and notes again that we appear to be heading over the medium term back toward the trends established over the longer term of higher aggregate production at lower real prices.

It is informative to separate the outlook for total real market cash receipts into crops versus livestock receipts. Real market receipts for livestock are expected to decline by about 2% in 1987 and to decline by 5% in 1988; for the period 1989 to 1992, no growth on average is expected. Real market receipts for crops are expected to fall by about 16% in 1987 and by another 8% in 1988 but then to rise by an average of almost 3% per year over the next four years.

However, despite the more optimistic outlook for medium-term growth in real receipts for crops (relative to livestock), it is sobering to note that by 1992 real crop receipts are only about 56% of the historical peak reached back in 1981

RISKS IN THE OUTLOOK

Forecasts are conditional on the knowledge that is available when they are made. As new information becomes available, forecasts change. There are three areas where the general theme of this medium-term outlook could change considerably:

- Foreign policy conditions, in particular, management of the U.S. Farm Bill and attempts to reduce higher stocks more quickly could result in lower prices or, conversely, less aggressive stock reductions would raise grain prices; i.e., foreign government policy will play a major role in the outlook.
- A lower world growth scenario, as perhaps suggested by recent stock market fluctuations, could dampen demand more significantly.
- Higher growth in production by major importers would create higher export market competition; in particular, higher-than-expected productivity in developing countries and in centrally planned economies could significantly lessen import demand.

CONCLUSION

The dominant feature of the current situation and medium-term outlook for the Canadian agri-food sector has been low grain prices brought on by extensive government intervention in world markets, particularly by the U.S. and the EC, but exacerbated by stagnant demand growth. The outlook is for some improvement, but feed prices are still expected to remain relatively low, and this will mean eventually lower meat prices. The net implication is lower real farm prices and food prices, putting these back on their long-term trends. While this may be seen in a negative light, it should be borne in mind that Canadian agriculture has shown a remarkable ability to compete on world markets and to adjust to its economic environment.

TABLE 1 GROSS DOMESTIC PRODUCT

	Percentage change		
	1971-75	1981-85	1986-90
World	4.3	2.1	2.5
OECD	3.8	2.2	2.3
Developing countries	6.2	1.0	2.7

Source: Wharton Econometric Forecasting Associates

FIGURE 1 U.S. TRADE-WEIGHTED EXCHANGE RATE (1980 = 100)

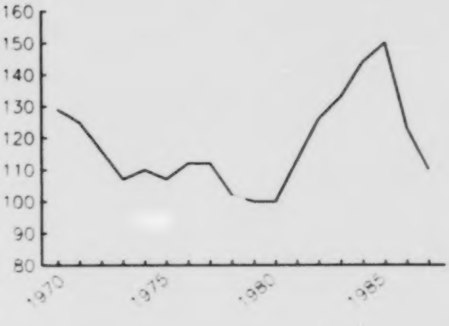


FIGURE 2 INDEX OF OECD AGRICULTURAL EXPENDITURES (1979-80 = 100)

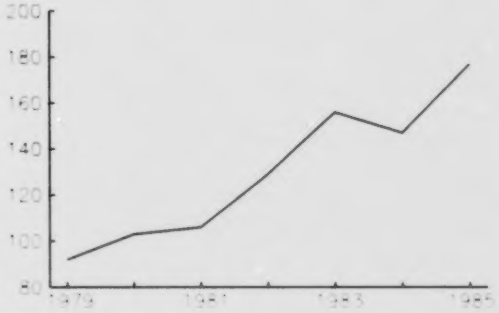


FIGURE 3 EEC BUTTER AND BEEF STOCKS (kt)

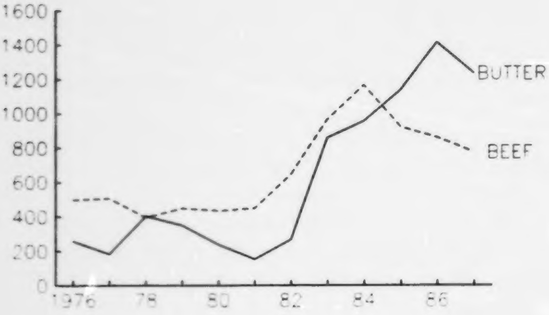


FIGURE 4 RATIO OF WORLD WHEAT STOCKS TO UTILIZATION (%)

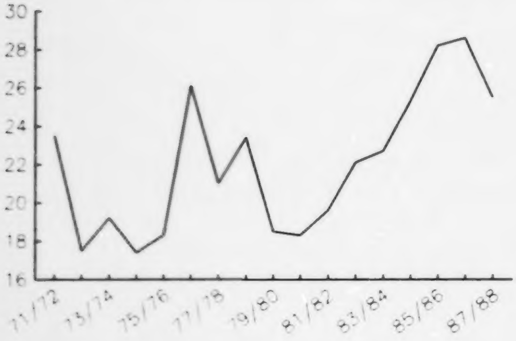


FIGURE 5 FARM PRICES FOR CEREALS AND OILSEEDS (1981 = 100)

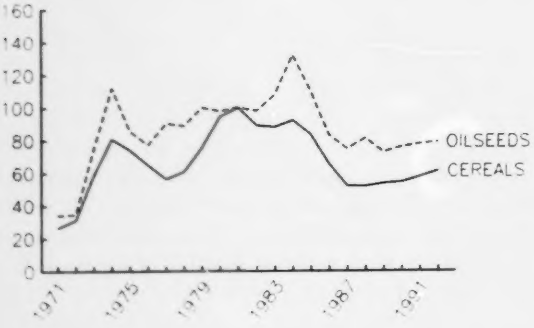


FIGURE 6 PLANTED ACREAGE (Mha)

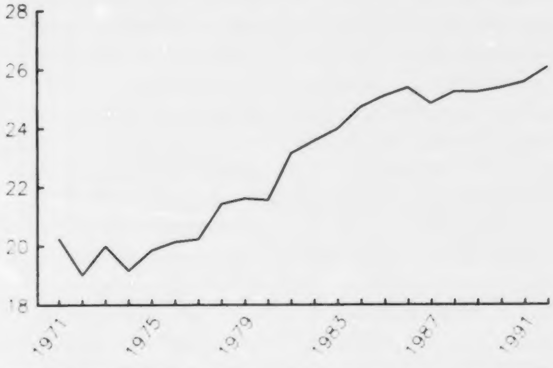


FIGURE 7 POTATO PRODUCTION (kt)

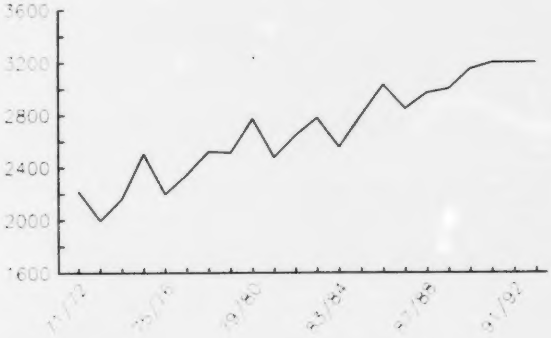


FIGURE 8 APPLE PRODUCTION (Mkg)

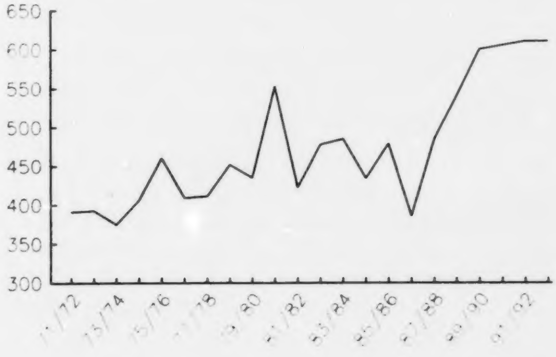


FIGURE 9 STEER AND FEEDER CALF PRICES ($/cwt)

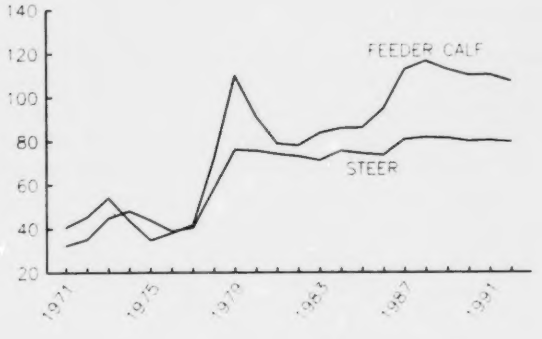


FIGURE 10 FARM BEEF PRODUCTION (Mkg)

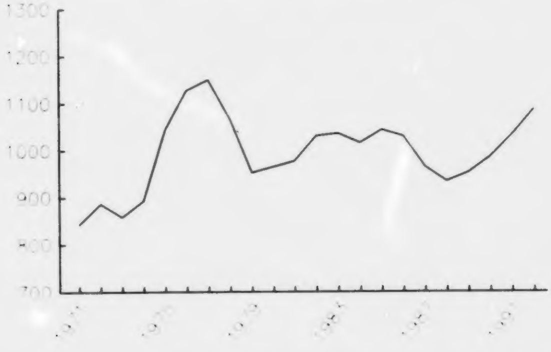


FIGURE 11 HOG PRICES ($/ckg)

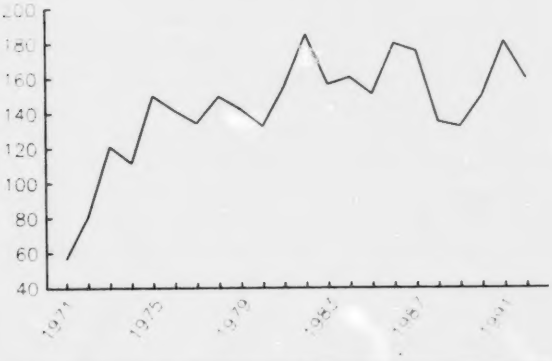


FIGURE 12 FARM PORK PRODUCTION (Mkg)

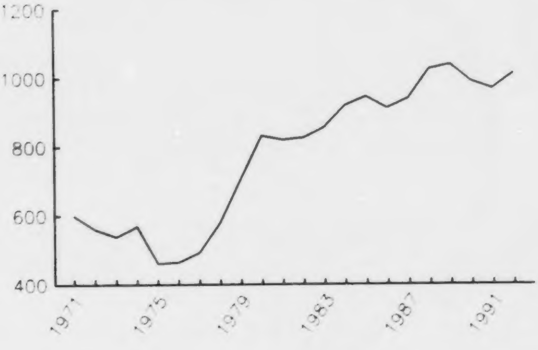


FIGURE 13 CHICKEN PRODUCTION (Mkg)

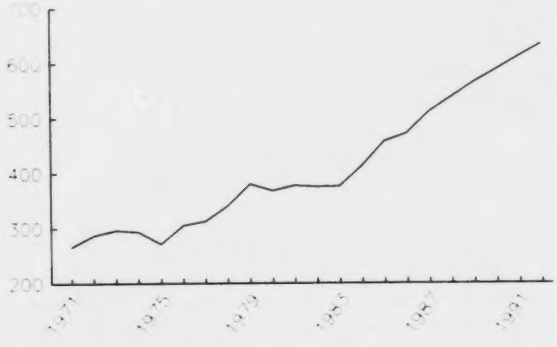


FIGURE 14 SHIPMENTS OF MILK (MhL)

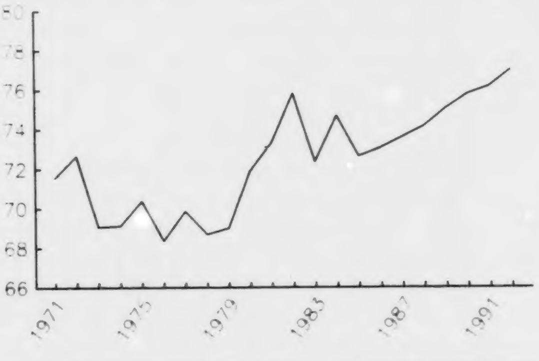


FIGURE 15 OVERALL FARM PRODUCT PRICES (1981 = 100 nominal)

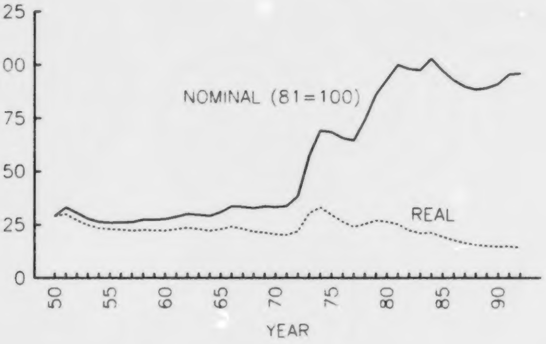


FIGURE 16 FARM PRODUCT PRICES FOR TOTAL CROPS AND LIVESTOCK (1981 = 100)

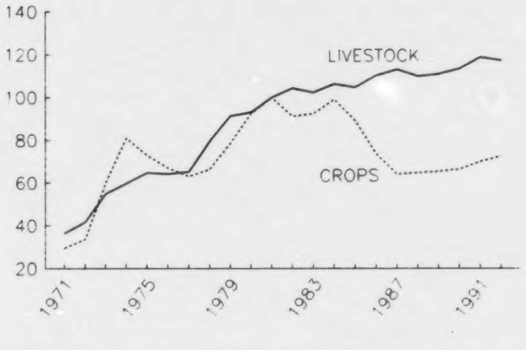
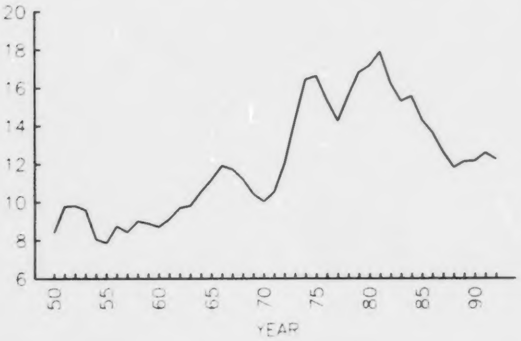


FIGURE 17 REAL CASH RECEIPTS FROM THE MARKET (1981 $ billion)



1987 Farm Income and Finance Situation

*Brian B. Perkins**

This presentation will address farm finance as well as farm income issues, seeking to provide a national perspective. Separate papers scheduled for the concurrent session on farm costs and income will examine in much more detail the farm finance and provincial income estimates.

Estimating farm income in Canada is a joint undertaking between Agriculture Canada and Statistics Canada in close collaboration with provincial ministries of Agriculture. The estimates are built up from thousands of individual commodity and input prices and quantities, and incorporate government program payments as well as market and on-farm components. It is a major exercise that goes on throughout the year to provide timely updates of income estimates for policy makers, the entire agricultural community and the interested public. The staff of the Farm Development Policy Directorate, Policy Branch, of Agriculture Canada and their many collaborators have provided the bases for this article. Forecasts of farm income are not included. This year the farm income forecasts will be released at the conclusion of the Outlook Conference.

FARM INCOME CONCEPTS

Realized net farm income is basically the difference between farm cash receipts and farm operating expenses and depreciation. Farm cash receipts include both receipts from market sales of products and direct payments received by producers under government programs. Operating expenses cover all purchased inputs (net of any government rebates), hired labor, interest expenses, rent payments and municipal taxes. For government programs partially funded by producer premiums, such as crop insurance or Western Grain Stabilization, the premiums are treated as an operating expense. Depreciation charges are an allowance for the depreciation of farm buildings and machinery. Realized net farm income, which is the concept used in these presentations, measures the net cash income received by farmers; that is, it ignores any changes in the value of farm inventory.

1987 REALIZED NET FARM INCOME

In 1987 an increase in farm cash receipts, combined with a reduction in operating expenses and depreciation, has resulted in a record level of realized net farm income. Realized net farm income, which has never before exceeded $5 billion, this year is estimated at nearly $5.8 billion. That is 16% higher than that in 1986, which was itself an all-time high, and 54% above the 1981-84 average. Of course, these comparisons ignore the effects of inflation on purchasing power or changes in the number of farm families sharing the income aggregate (Table 1).

Yet for many in the farm community, 1987 has been a disastrous year, with markets at rock-bottom prices, highly uncertain prospects for economic recovery, and threats and even occurrences of financial failure. Apparently there is a paradox here. How can record net farm incomes be reconciled with major financial losses and with a rising incidence of farm financial failure? How can very favorable farm cash receipts be squared with lack of confidence in the industry's future? To explain the paradox, let me start by looking at the reasons for the record 1987 income levels.

Briefly, 1987 farm income levels are the result of favorable markets for livestock commodities and many crops other than grains and oilseeds, of some reduction in input costs and of large payments under government assistance programs. Let us examine each of these reasons in turn.

Market receipts – that is, proceeds from the sale of farm products excluding any government program payments – increased moderately or remained close to 1986 levels for commodities other than grains and oilseeds. Livestock receipts in particular were up by 4% over 1986 levels, primarily because of higher cattle prices. Grains and oilseeds receipts are a different story, of course; market receipts in 1987 declined by 15% over 1986 levels and by 32% relative to the 1981-84 average. On balance, declines in grains and oilseeds market receipts were partially offset by higher receipts for other commodities, so total market receipts for all commodities declined by only 3% this year (Table 2).

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* Director General, Farm Development Policy Directorate, Policy Branch, Agriculture Canada.

Farm operating expenses in 1987 were down for a second year, averaging 2.6% less than those in 1986. A number of input prices were lower in 1987, and reductions in the use of some inputs also occurred. Fertilizer expenses, for example, were down by 12% because of both lower prices and reduced use. Interest expenses were nearly 7% lower, mainly because of lower interest rates. Rents declined by more than 20%, largely because of depressed grain markets. For the same reason, feed expenses were down by more than 4%. Indeed, farmers selling livestock and livestock products on the basis of purchased feed have had very favorable margins in 1987 (Table 3).

Finally, all federal and provincial direct program payments to farmers rose to $3.9 billion in 1987 from $2.9 billion in 1986. This increase is attributable primarily to the Special Canadian Grains Program, which made $1 billion in payments to grains and oilseeds growers in 1987; however, there also were increases in Western Grain Stabilization payments. Indeed, the increase in direct program payments is confined to grains and oilseeds and totaled $1.2 billion; other commodity sectors had lower direct program payments. Total program payments have increased conspicuously over the years, not only in absolute terms, but also relative to total farm market receipts. In the 1981-84 period, program payments for all commodities averaged less than 7% of total farm market receipts; by 1987 this proportion has risen to 22% (I remind you that all these comparisons are in terms of gross payments, since any producer premiums are treated as an operating expense).

Examination of the differences in income experience among commodity sectors is hampered by the lack of any estimates of depreciation charges by commodity sector. We have therefore coined the term "net revenue" to refer to the difference between total receipts and operating expenses; that is, ignoring depreciation charges. Put differently, net revenue is analogous to realized net income but, by excluding depreciation, it deals with the cash components of net income (Table 4).

In this presentation, total net revenue for a commodity sector is broken down into gross direct program payments and market receipts net of operating expenses, or net market revenue. This breakdown helps to show the importance of government assistance programs relative to market sources of farmers' earnings in any period.

Net revenue from sales of commodities other than grains and oilseeds reached a record $5.2 billion in 1987, up 6% over 1986 levels and 68% above the 1981-84 average. These increases were due mainly to higher earnings from markets net of operating expenses; indeed, government program payments to these commodity sectors were lower in 1987 (Table 5).

By contrast, the net revenue situation for grains and oilseeds is very different. Market receipts net of operating expenses have declined catastrophically since the early 1980s, while government program payments have expanded in almost offsetting proportions. As a consequence, nearly all the net revenue of $2.9 billion for the grains and oilseeds sector in 1987 is attributable to government assistance programs. Between 1986 and 1987, the increase in program payments more than offset market declines, so net revenue in this sector rose significantly. These changes in net revenue components for grains and oilseeds are similar in direction in both eastern and western Canada. However, grains and oilseeds production is concentrated in the West, and of course in much of the Prairies it is the dominant agricultural sector.

Do these estimates of net farm income and net revenue mean that farmers have no income problems? By no means. Neither the distribution of market revenue nor the distribution of program payments among farmers is uniform. The estimates show the situation for the industry or the commodity sector as a whole. As such, they represent averages, which range from very favorable income situations for some farmers to outright losses for others. But this, of course, is true in any year and is not an explanation of problems in 1987.

Fundamentally, the problems facing significant portions of Canadian agriculture in 1987 are financial problems. The financial situation, as opposed to the income situation, embodies the accumulated impacts of past economic decisions and developments and is influenced by expectations of future economic performance.

So then what is the evidence for farm financial difficulties? I propose to consider, as indicators, debt-servicing ability, farm equity and land value changes, debt payment arrears, farm lender losses, and returns to investment (Table 6).

While debt-servicing requirements and abilities are best examined at the individual farm level, changes in the capacity of the industry to service debt are a good general indicator of financial pressure. Debt-servicing requirements to meet both principal and interest payments are displayed in Figure 1 as a percentage of net revenue (gross of interest expenses), which is a measure of the cash available to service debt. The substantial increases in indebtedness in the 1970s meant that Canadian agriculture entered the 1980s with a high debt-servicing burden. The silver lining in this indicator is that it appears to have peaked in 1985. Total debt declined marginally in 1986 and is expected to have gone down further in 1987, for a total reduction of nearly $1 billion since 1985.

A more telling general indicator of financial fortunes are the changes in farm equity. Primarily because of soaring land values, nominal farm equity values rose from about $20 billion at the beginning of the 1970s to more than $110 billion in the early 1980s. Since 1981, however, a series of economic problems has precipitated a loss of confidence in prospective earnings for the industry, and equity values have fallen sharply. The equity losses in nominal terms have now exceeded $25 billion. Proportionately, the losses have been somewhat higher in the West, especially in those areas most dependent on grains and oilseeds (Figure 2).

Most of the decline in farm equity values is attributable to lower farm real estate values. Agriculture, unlike most industries, values its real estate assets on the basis of current market prices rather than on acquisition values, and this equity measure is inherently less stable. However, as Table 7 shows, the recent declines in real estate values have been considerable at the national level and are highly variable from one region to another. For example, between 1984 and 1987, the national decline in farm real estate values was about 24%, but this decline ranged from 30% in Saskatchewan to a slight increase in Quebec. The major factor in these regional differences is the relative importance of grains and oilseeds.

Perhaps the most direct indicator of financial difficulty is the incidence of those farm borrowers whose arrears on loan payments are so serious as to point to financial failure. On the basis of a survey of farm creditors, we estimate that more than 7% of Canadian farm borrowers are in serious financial difficulty. The incidence of these problems is heavily concentrated in the Prairie provinces, where the proportion reaches 10%. These percentages may not seem high by comparison with many other kinds of small businesses but, in relation to normal farm loan experience and farm business failure rates, they are very high.

Farm financial recovery is closely linked to a turnaround in land values and to prospects of real capital gains. Total returns to assets in farming typically are dependent on real capital gains. In favorable periods, capital gains account for the main part of the total return on assets. In unfavorable periods, capital losses usually offset earnings from farm production, making total returns on assets negative. That is why a bottoming out in land prices is a critical indicator of recovery. In fact, in most of eastern Canada, that turnaround appears to have occurred and, even in western Canada, prices for some types of land in a number of areas appear to have stabilized.

The consequences of farm financial stress are not confined to farmers. Creditors as well as industries and communities associated with agriculture have to a significant extent been affected also. Chartered bank loan losses, historically negligible because of the strength of farm loan security, were estimated to have totaled $260 million in 1985 and 1986; credit unions, particularly in the Prairies, have also had significant farm loan losses. Provincial and federal lending agencies have incurred substantially higher losses because their clientele are higher-risk farmers. Rough estimates suggest these government agency losses to date are around $1 billion.

Similarly, the repercussions of reduced farm investment and expenditures, combined with farm failures, have impacted seriously on sectors like farm machinery and fertilizer dealers and especially on rural communities in the Prairies, which are heavily dependent on farming (Figure 3).

To sum up, the Canadian farm sector is not facing an income crisis; on the contrary, aggregate farm incomes in nearly all commodity sectors and regions are favorable when both market and government assistance sources of income are taken into account. However, many farmers are facing serious financial difficulty, and a majority of farmers have experienced a loss of confidence in their future. Their confidence has been shaken because of the uncertainties of international market recovery, their heavy reliance on government assistance programs, continuing equity losses and, in the absence of capital gains, the generally poor and even negative returns on farm investments.

While lasting solutions to these problems can only be found through multilateral negotiations to reform domestic and international trade policies, Canadian agriculture is already experiencing structural adjustments that contain seeds of economic recovery. Financial restructuring of the sector through reduced debt, revaluation of farm assets, and better financing for financially troubled farms are all contributing to its future financial health. Commodity shifts in line with market signals, production practices to make more economical use of resources and tighter financial management are also part of the bases of recovery.

In this article, I have tried to provide a perspective on the apparent paradox of farm financial difficulty coinciding with record net farm incomes. A sound perspective on this issue is important for both public and private sector decisions.

Reasons for record 1987 income:

- favorable markets for most commodities;
- reduced input prices and utilization; and
- higher program payments.

Farm financial difficulties:

- debt servicing ability;
- debt arrears;
- lender losses;
- land value and equity losses; and
- returns on investment.

Financial failure adjustments:

- reduced asset values;
- financially stronger farms;
- commodity shifts;
- increased leasing; and
- ownership concentration.

Reduced debt by:

- reduced investment;
- accelerated pre-payments;
- increased write-offs; and
- more cautious lending.

TABLE 1 REALIZED NET FARM INCOME

	1981-84	1985	1986	1987
		($ billion)		
Farm cash receipts	19.1	19.9	20.5	20.9
Expenses and depreciation	16.7	16.3	15.8	15.4
Realized net income	3.7	3.9	4.9	5.8

TABLE 2 MARKET RECEIPTS

	1981-84	1985	1986	1987
		($ billion)		
Grains and oilseeds	6.8	6.2	5.4	4.6
All livestock	9.2	9.8	10.1	10.5
Other commodities	2.2	2.2	2.7	2.6
All commodities	18.2	18.2	18.2	17.7

TABLE 3 OPERATING EXPENSES, 1987 OVER 1986

Selected Inputs	Decline
	(%)
Fertilizer	11.9
Rent	20.5
Interest expenses	6.8
Feed	4.3
Total expenses	2.6

TABLE 4 GROSS DIRECT PROGRAM PAYMENTS

	1981-84	1985	1986	1987
		($ billion)		
Grains and oilseeds	0.3	1.1	1.5	2.7
Other commodities	0.9	1.1	1.4	1.2
Total	1.2	2.2	2.9	3.9
		(%)		
Total receipts	6.7	12.1	16.0	22.1

TABLE 5 NET REVENUE EXCLUDING GRAINS AND OILSEEDS

	1981-84	1985	1986	1987
		($ billion)		
Net market revenue	2.2	2.7	3.5	4.0
Gross direct program payments	0.9	1.1	1.4	1.2
Total net revenue	3.1	3.8	4.9	5.2

TABLE 6 NET REVENUE FROM GRAINS AND OILSEEDS

	1981-84	1985	1986	1987
		($ billion)		
Net market revenue	2.7	1.4	0.9	0.2
Gross direct program payments	0.3	1.1	1.5	2.7
Total net revenue	3.0	2.5	2.4	2.9

TABLE 7 FARMLAND AND BUILDING VALUE CHANGES

	1984-87	1986-87
	(%)	
British Columbia	-28.5	-11.3
Alberta	-22.8	-8.3
Saskatchewan	-30.3	-15.3
Manitoba	-17.7	-6.7
Ontario	-17.1	-3.9
Quebec	+2.7	+2.3
New Brunswick	-0.5	+0.6
Nova Scotia	-0.6	+2.1
Prince Edward Island	-24.5	-7.5
Canada	-23.7	-10.1

TABLE 8 1987 GRAINS AND OILSEEDS REVENUE (% change over 1981-84)

	West	East
Net market revenue	-90.2	-101.0
Gross direct program payments	+729.9	+558.6
Total net revenue	+4.3	-4.4

TABLE 9 FARMER ENTRY AND EXITS

	Exits	Entry	Net decline	Decline
		(thousands)		(%)
1971-76	130	102	28	7.2
1976-81	100	80	20	5.9
1981-86	NA	NA	25	7.9

FIGURE 1 RATIO OF DEBT-SERVICING REQUIREMENTS TO NET REVENUE (%)

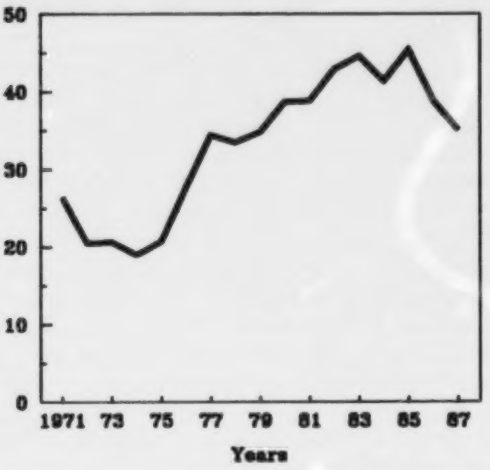


FIGURE 2 FARM EQUITY ($ billion)

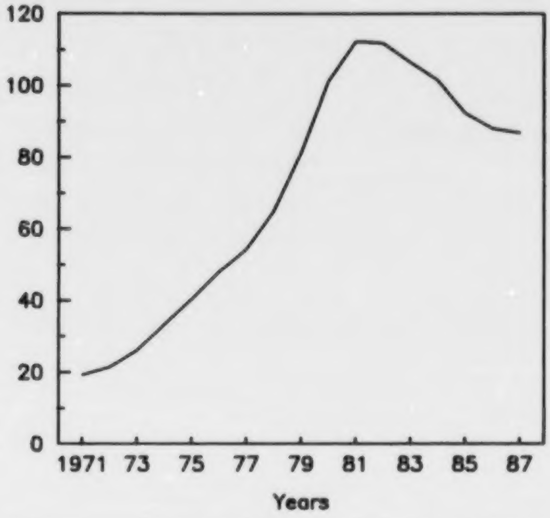
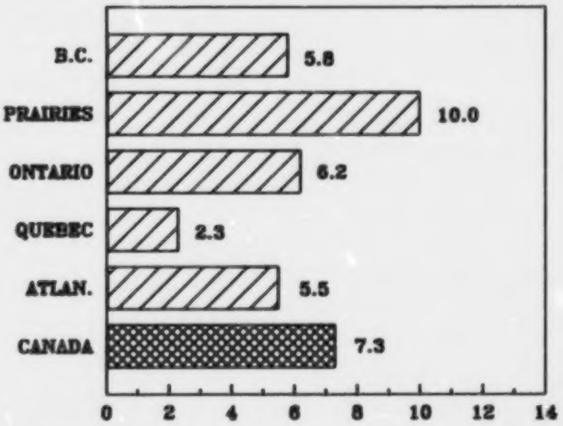


FIGURE 3 PROPORTION OF FARM BORROWERS IN SERIOUS FINANCIAL DIFFICULTY (%)



1987 Farm Income Highlights

REALIZED NET FARM INCOME

Realized net farm income for 1987 is projected to increase by 16.2% to $5.75 billion from the revised estimate of $4.95 billion in 1986.

The expected increase in realized net farm income will not be shared equally among the provinces. The largest increases are projected for Prince Edward Island (50.5%), Saskatchewan (36.2%) and New Brunswick (33.5%). The only province expected to register a decline in realized net farm income this year is Manitoba (–4.0%).

FARM CASH RECEIPTS

Total farm cash receipts are expected to increase from $20.49 billion in 1986 to $20.92 billion in 1987, with higher livestock receipts offsetting lower crop receipts.

Crop receipts in Canada are expected to decline by 6.4% to $8.7 billion, with market receipts from grains and oilseeds estimated to drop by 16%. Substantial increases in market receipts from potatoes, fruits and vegetables and increases in direct program payments to grain producers helped offset low grain receipts.

Receipts from sales of livestock and livestock products are expected to increase by 3.9% for a record high of $10.52 billion in 1987. Cattle and calf receipts will increase 5.9% as record high cattle prices will more than offset a decrease in marketings. Conversely, higher production will be largely offset by lower prices in the hog sector, resulting in a 1% increase in hog receipts. Dairy receipts should increase by 2.7% as net target returns are expected to increase because of reduced producer levies. Lower prices for poultry are more than offset by an increase in marketings, resulting in an increase of 4.3% in poultry receipts. A 0.4% decline in egg receipts can be attributed to a marginal decline in egg prices.

Other cash receipts, which are primarily government program payments to producers, are expected to increase by 60.9%, mainly because of the $1 billion Special Canadian Grains Program.

FARM EXPENSES

Farm operating expenses and depreciation charges in Canada are projected to decline to $15.43 billion, a decrease of 2.3% from the 1986 level. The major expense items contributing to the overall decline in farm expenses for 1987 are fertilizer, feed, rental payments and interest charges. A reduction of 12% in fertilizer expenses is due to both lower prices and quantity used. An increase in feed consumed is more than offset by a larger decline in feed prices, resulting in a decrease of 4.3% in feed expenses. Reductions in total debt outstanding and interest rates contributed to a 6.8% decline in interest expenses.

Total depreciation charges are expected to decline by 1% mainly because of lower machinery depreciation, the result of declining investments in farm machinery.

Total net farm income in Canada, which takes into account the value of inventory change, is estimated to increase 1.3% to $5.56 billion, despite lower on-farm inventories for wheat and cattle and calves.

TABLE 1A FARM CASH RECEIPTS, 1986 AND 1987, CANADA

	1986	1987	Change 1987/86
	($ 000)		(%)
Wheat[1]	2 829 384	2 478 659	-12.40
Oats[1]	50 428	45 759	-9.26
Barley[1]	787 752	521 085	-33.85
Crop Insurance, Advances, Deferments and WGSA[2]	1 661 966	1 662 715	0.05
Rye	20 819	20 124	-3.34
Flaxseed	140 351	121 404	-13.50
Canola/Rapeseed	660 333	743 286	12.56
Soybeans	240 551	238 448	-0.87
Corn	439 054	447 808	1.99
Sugar Beets	17 746	19 293	8.72
Potatoes	285 785	349 609	22.33
Fruits	311 754	332 494	6.65
Vegetables	587 789	632 118	7.54
Tobacco	452 487	243 553	-46.17
Other Crops[3]	837 485	871 274	4.03
Total Crops	9 323 674	8 727 629	-6.39
Cattle & Calves	3 564 389	3 775 339	5.92
Hogs	2 121 228	2 142 345	1.00
Sheep & Lambs	33 035	34 080	3.16
Dairy Products	2 804 499	2 881 185	2.73
Poultry	942 586	982 620	4.25
Eggs	502 185	500 142	-0.41
Other Livestock	156 580	204 259	30.45
Total Livestock	10 124 502	10 519 970	3.91
Other Cash Receipts[4]	1 037 562	1 669 271	60.88
Total Cash Receipts	20 485 738	20 916 870	2.10

TABLE 1B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARMING OPERATIONS, 1986 AND 1987, CANADA

	1986	1987	Change 1987/86
	($ 000)		(%)
Taxes[5]	296 228	285 882	-3.49
Gross Farm Rent	658 503	523 357	-20.52
Wages to Farm Labour	1 430 485	1 489 161	4.10
Interest on Indebtedness[6]	1 804 158	1 681 669	-6.79
Total Machinery Expenses[7]	2 216 881	2 294 742	3.51
Fertilizer & Lime[8]	1 291 231	1 137 571	-11.90
Other Crop Expenses[9]	1 178 404	1 177 415	-0.08
Feed[10]	1 893 828	1 812 327	-4.30
Other Livestock Expenses[11]	557 078	609 378	9.39
Repairs to Buildings[5]	272 412	283 095	3.92
Electricity and Telephone	383 911	403 269	5.04
Miscellaneous[12]	1 191 399	1 134 613	-4.77
Total Operating Expenses	13 174 518	12 832 479	-2.60
Depreciation on Buildings	421 244	434 319	3.10
Depreciation on Machinery	2 198 932	2 163 115	-1.63
Total Op. Expenses & Dep. Charges	15 794 694	15 429 913	-2.31
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	20 485 738	20 916 870	2.10
Plus Income-in-Kind	256 371	263 786	2.89
Realized Gross Income	20 742 109	21 180 656	2.11
Less Op. Expenses & Dep. Charges	15 794 694	15 429 913	-2.31
Realized Net Income	4 947 415	5 750 743	16.24
Plus Value of Inventory Change	536 295	-194 110	-136.19
Total Net Income	5 483 710	5 556 633	1.33

See notes at end of tables.

TABLE 2A FARM CASH RECEIPTS, 1986 AND 1987, NEWFOUNDLAND

	1986	1987	Change 1987/86
	($ 000)		(%)
Wheat[1]	-	-	-
Oats[1]	-	-	-
Barley[1]	-	-	-
Crop Insurance, Advances, Deferments and WGSA[2]	1	50	4900.00
Rye	-	-	-
Flaxseed	-	-	-
Canola/Rapeseed	-	-	-
Soybeans	-	-	-
Corn	-	-	-
Sugar Beets	-	-	-
Potatoes	1 177	1 167	-0.85
Fruits	509	714	40.28
Vegetables	2 307	2 231	-3.29
Tobacco	-	-	-
Other Crops[3]	2 464	2 528	2.60
Total Crops	6 458	6 690	3.59
Cattle & Calves	1 312	1 318	0.46
Hogs	4 658	4 326	-7.13
Sheep & Lambs	117	97	-17.09
Dairy Products	11 001	12 446	13.14
Poultry	12 638	13 360	5.71
Eggs	8 620	8 658	0.44
Other Livestock	639	1 049	64.16
Total Livestock	38 985	41 254	5.82
Other Cash Receipts	450	615	36.67
Total Cash Receipts	45 893	48 559	5.81

TABLE 2B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARMING OPERATIONS, 1986 AND 1987, NEWFOUNDLAND

	1986	1987	Change 1987/86
	($ 000)		(%)
Taxes[5]	45	47	4.44
Gross Farm Rent	130	129	-0.77
Wages to Farm Labour	4 910	5 161	5.11
Interest on Indebtedness[6]	1 765	1 786	1.19
Total Machinery Expenses[7]	2 459	2 344	-4.68
Fertilizer & Lime[8]	1 023	1 043	1.96
Other Crop Expenses[9]	899	919	2.22
Feed[10]	15 836	17 752	12.10
Other Livestock Expenses[11]	937	993	5.98
Repairs to Buildings[5]	474	495	4.43
Electricity and Telephone	985	1 013	2.84
Miscellaneous[12]	1 982	1 959	-1.16
Total Operating Expenses	31 445	33 641	6.98
Depreciation on Buildings	628	653	3.98
Depreciation on Machinery	1 294	1 251	-3.32
Total Op. Expenses & Dep. Charges	33 367	35 545	6.53
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	45 893	48 559	5.81
Plus Income-in-Kind	588	588	0.00
Realized Gross Income	46 481	49 147	5.74
Less Op. Expenses & Dep. Charges	33 367	35 545	6.53
Realized Net Income	13 114	13 602	3.72
Plus Value of Inventory Change	284	594	109.15
Total Net Income	13 398	14 196	5.96

See notes at end of tables.

TABLE 3A FARM CASH RECEIPTS, 1986 AND 1987, PRINCE EDWARD ISLAND

	1986	1987	Change 1987/86
	($ 000)		(%)
Wheat[1]	556	530	-4.68
Oats[1]	467	352	-24.63
Barley[1]	2 901	2 326	-19.82
Crop Insurance, Advances, Deferments and WGSA[2]	1 825	2 300	26.03
Rye	-	-	-
Flaxseed	-	-	-
Canola/Rapeseed	-	-	-
Soybeans	-	-	-
Corn	-	-	-
Sugar Beets	-	-	-
Potatoes	57 270	78 553	37.16
Fruits	2 050	2 187	6.68
Vegetables	4 500	4 604	2.31
Tobacco	10 021	8 430	-15.88
Other Crops[3]	4 995	4 401	-11.89
Total Crops	84 585	103 683	22.58
Cattle & Calves	28 098	31 432	11.87
Hogs	25 491	27 263	6.95
Sheep & Lambs	257	285	10.89
Dairy Products	30 552	30 376	-0.58
Poultry	1 460	1 294	-11.37
Eggs	3 043	3 102	1.94
Other Livestock	2 044	3 574	74.85
Total Livestock	90 945	97 326	7.02
Other Cash Receipts[4]	12 642	9 175	-27.42
Total Cash Receipts	188 172	210 184	11.70

TABLE 3B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARMING OPERATIONS, 1986 AND 1987, PRINCE EDWARD ISLAND

	1986	1987	Change 1987/86
	($ 000)		(%)
Taxes[5]	1 619	1 692	4.51
Gross Farm Rent	3 001	3 276	9.16
Wages to Farm Labour	18 327	19 244	5.00
Interest on Indebtedness[6]	13 548	11 695	-13.68
Total Machinery Expenses[7]	23 613	22 980	-2.68
Fertilizer & Lime[8]	15 898	16 937	6.54
Other Crop Expenses[9]	12 041	12 494	3.76
Feed[10]	17 909	17 193	-4.00
Other Livestock Expenses[11]	6 292	6 756	7.37
Repairs to Buildings[5]	2 517	2 630	4.49
Electricity and Telephone	3 799	3 850	1.34
Miscellaneous[12]	9 127	9 079	-0.53
Total Operating Expenses	127 691	127 826	0.11
Depreciation on Buildings	2 675	2 782	4.00
Depreciation on Machinery	15 674	15 126	-3.50
Total Op. Expenses & Dep. Charges	146 040	145 734	-0.21
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	188 172	210 184	11.70
Plus Income-in-Kind	2 331	2 468	5.88
Realized Gross Income	190 503	212 652	11.63
Less Op. Expenses & Dep. Charges	146 040	145 734	-0.21
Realized Net Income	44 463	66 918	50.50
Plus Value of Inventory Change	-4 365	-9 410	115.58
Total Net Income	40 098	57 508	43.42

See notes at end of tables.

TABLE 4A FARM CASH RECEIPTS, 1986 AND 1987, NOVA SCOTIA

	1986	1987	Change 1987/86
	($ 000)		(%)
Wheat[1]	715	725	1.40
Oats[1]	193	160	-17.10
Barley[1]	179	179	0.00
Crop Insurance, Advances, Deferments and WGSA[2]	975	900	-7.69
Rye	–	–	–
Flaxseed	–	–	–
Canola/Rapeseed	–	–	–
Soybeans	–	–	–
Corn	–	–	–
Sugar Beets	–	–	–
Potatoes	4 108	5 568	35.54
Fruits	19 325	21 142	9.40
Vegetables	9 129	9 663	5.85
Tobacco	2 030	1 861	-8.33
Other Crops[3]	13 444	15 024	11.75
Total Crops	50 098	55 222	10.23
Cattle & Calves	29 779	29 447	-1.11
Hogs	34 886	34 207	-1.95
Sheep & Lambs	1 605	1 811	12.83
Dairy Products	79 892	81 749	2.32
Poultry	31 068	34 349	10.56
Eggs	18 957	19 237	1.48
Other Livestock	8 000	19 019	137.74
Total Livestock	204 187	219 819	7.66
Other Cash Receipts[4]	10 720	10 047	-6.28
Total Cash Receipts	265 005	285 088	7.58

TABLE 4B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARMING OPERATIONS, 1986 AND 1987, NOVA SCOTIA

	1986	1987	Change 1987/86
	($ 000)		(%)
Taxes[5]	2 269	2 371	4.50
Gross Farm Rent	1 946	1 941	-0.26
Wages to Farm Labour	33 709	34 383	2.00
Interest on Indebtedness[6]	13 542	12 796	-5.51
Total Machinery Expenses[7]	22 123	21 726	-1.79
Fertilizer & Lime[8]	9 221	9 189	-0.35
Other Crop Expenses[9]	9 549	9 748	2.08
Feed[10]	55 874	57 718	3.30
Other Livestock Expenses[11]	3 935	4 062	3.23
Repairs to Buildings[5]	4 714	4 926	4.50
Electricity and Telephone	5 195	5 326	2.52
Miscellaneous[12]	11 103	11 032	-0.64
Total Operating Expenses	173 180	175 218	1.18
Depreciation on Buildings	6 832	7 105	4.00
Depreciation on Machinery	15 053	14 355	-4.64
Total Op. Expenses & Dep. Charges	195 065	196 678	0.83
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	265 005	285 088	7.58
Plus Income-in-Kind	6 453	6 723	4.18
Realized Gross Income	271 458	291 811	7.50
Less Op. Expenses & Dep. Charges	195 065	196 678	0.83
Realized Net Income	76 393	95 133	24.53
Plus Value of Inventory Change	-1 730	2 211	-227.80
Total Net Income	74 663	97 344	30.38

See notes at end of tables.

TABLE 5A FARM CASH RECEIPTS, 1986 AND 1987, NEW BRUNSWICK

	1986	1987	Change 1987/86
	($ 000)		(%)
Wheat[1]	459	449	-2.18
Oats[1]	1 096	931	-15.05
Barley[1]	994	917	7.75
Crop Insurance, Advances, Deferments and WGSA[2]	2 800	2 800	0.00
Rye	–	–	–
Flaxseed	–	–	–
Canola/Rapeseed	–	–	–
Soybeans	–	–	–
Corn	–	–	–
Sugar Beets	–	–	–
Potatoes	42 796	56 838	32.81
Fruits	7 805	9 592	22.90
Vegetables	8 700	8 382	-3.66
Tobacco	1 040	940	-9.62
Other Crops[3]	8 255	9 093	10.15
Total Crops	73 945	89 942	21.63
Cattle & Calves	25 490	24 921	-2.23
Hogs	22 232	20 635	-7.18
Sheep & Lambs	407	439	7.86
Dairy Products	53 743	55 705	3.65
Poultry	22 871	24 784	8.36
Eggs	13 487	13 686	1.48
Other Livestock	2 852	4 851	70.09
Total Livestock	141 082	145 021	2.79
Other Cash Receipts[4]	11 570	11 352	-1.88
Total Cash Receipts	226 597	246 315	8.70

TABLE 5B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARMING OPERATIONS, 1986 AND 1987, NEW BRUNSWICK

	1986	1987	Change 1987/86
	($ 000)		(%)
Taxes[5]	2 396	2 504	4.51
Gross Farm Rent	1 247	1 357	8.82
Wages to Farm Labour	23 892	23 892	0.00
Interest on Indebtedness[6]	18 231	16 697	-8.41
Total Machinery Expenses[7]	24 801	24 017	-3.16
Fertilizer & Lime[8]	11 987	12 893	7.56
Other Crop Expenses[9]	10 555	11 861	12.37
Feed[10]	38 108	37 574	-1.40
Other Livestock Expenses[11]	3 209	2 547	-20.63
Repairs to Buildings[5]	3 232	3 377	4.49
Electricity and Telephone	4 216	4 203	-0.31
Miscellaneous[12]	7 096	7 051	-0.63
Total Operating Expenses	148 970	147 973	-0.67
Depreciation on Buildings	3 459	3 597	3.99
Depreciation on Machinery	15 192	14 959	-1.53
Total Op. Expenses & Dep. Charges	167 621	166 529	-0.65
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	226 597	246 315	8.70
Plus Income-in-Kind	3 534	3 668	3.79
Realized Gross Income	230 131	249 983	8.63
Less Op. Expenses & Dep. Charges	167 621	166 529	-0.65
Realized Net Income	62 510	83 454	33.51
Plus Value of Inventory Change	-16 126	7 871	-148.81
Total Net Income	46 384	91 325	96.89

See notes at end of tables.

TABLE 6A FARM CASH RECEIPTS, 1986 AND 1987, QUEBEC

	1986	1987	Change 1987/86
	($ 000)		(%)
Wheat[1]	14 647	10 503	-28.29
Oats[1]	12 794	8 881	-30.58
Barley[1]	25 557	21 463	-16.02
Crop Insurance, Advances, Deferments and WGSA[2]	20 065	23 000	14.63
Rye	–	–	–
Flaxseed	–	–	–
Canola/Rapeseed	–	–	–
Soybeans	–	–	–
Corn	126 088	92 140	-26.92
Sugar Beets	636	–	–
Potatoes	45 146	53 307	18.08
Fruits	41 428	50 982	23.06
Vegetables	111 047	124 860	12.44
Tobacco	18 833	24 644	30.86
Other Crops[3]	81 709	92 988	13.80
Total Crops	497 950	502 768	0.97
Cattle & Calves	296 333	313 069	5.65
Hogs	672 815	662 278	-1.57
Sheep & Lambs	7 215	6 607	-8.43
Dairy Products	1 011 865	1 047 307	3.50
Poultry	267 100	283 317	6.07
Eggs	90 117	90 370	0.28
Other Livestock	24 898	28 589	14.82
Total Livestock	2 370 343	2 431 537	2.58
Other Cash Receipts[4]	359 273	337 919	-5.94
Total Cash Receipts	3 227 566	3 272 224	1.38

TABLE 6B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARMING OPERATIONS, 1986 AND 1987, QUEBEC

	1986	1987	Change 1987/86
	($ 000)		(%)
Taxes[5]	22 859	22 685	-0.76
Gross Farm Rent	20 881	20 111	-3.69
Wages to Farm Labour	222 766	233 904	5.00
Interest on Indebtedness[6]	250 873	240 727	-4.04
Total Machinery Expenses[7]	255 088	250 061	-1.97
Fertilizer & Lime[8]	147 358	147 832	0.32
Other Crop Expenses[9]	138 894	145 462	4.73
Feed[10]	599 164	576 995	-3.70
Other Livestock Expenses[11]	68 867	69 178	0.45
Repairs to Buildings[5]	54 628	55 939	2.40
Electricity and Telephone	70 637	73 230	3.67
Miscellaneous[12]	140 380	142 187	1.29
Total Operating Expenses	1 992 395	1 978 311	-0.71
Depreciation on Buildings	62 458	64 956	4.00
Depreciation on Machinery	197 171	202 032	2.47
Total Op. Expenses & Dep. Charges	2 252 024	2 245 299	-0.30
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	3 227 566	3 272 224	1.38
Plus Income-in-Kind	63 186	62 961	-0.36
Realized Gross Income	3 290 752	3 335 185	1.35
Less Op. Expenses & Dep. Charges	2 252 024	2 245 299	-0.30
Realized Net Income	1 038 728	1 089 886	4.93
Plus Value of Inventory Change	-38 032	-12 678	-66.66
Total Net Income	1 000 696	1 077 208	7.65

See notes at end of tables.

TABLE 7A FARM CASH RECEIPTS, 1986 AND 1987, ONTARIO

	1986	1987	Change 1987/86
	($ 000)		(%)
Wheat[1]	123 401	66 842	-45.83
Oats[1]	1 790	1 396	-22.01
Barley[1]	14 745	14 166	-3.93
Crop Insurance, Advances, Deferments and WGSA[2]	22 596	17 500	-22.55
Rye	482	285	-40.87
Flaxseed	–	–	–
Canola/Rapeseed	–	–	–
Soybeans	240 551	238 448	-0.87
Corn	305 937	350 069	14.43
Sugar Beets	–	–	–
Potatoes	39 893	47 855	19.96
Fruits	132 040	128 182	-2.92
Vegetables	334 471	358 842	7.29
Tobacco	420 563	207 678	-50.62
Other Crops[3]	369 490	395 415	7.02
Total Crops	2 005 959	1 826 678	-8.94
Cattle & Calves	1 133 004	1 133 846	0.07
Hogs	680 465	695 623	2.23
Sheep & Lambs	11 347	11 740	3.46
Dairy Products	965 839	997 803	3.31
Poultry	338 829	359 727	6.17
Eggs	196 102	194 051	-1.05
Other Livestock	44 276	65 602	48.17
Total Livestock	3 369 862	3 458 392	2.63
Other Cash Receipts[4]	132 883	353 084	165.71
Total Cash Receipts	5 508 704	5 638 154	2.35

TABLE 7B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARMING OPERATIONS, 1986 AND 1987, ONTARIO

	1986	1987	Change 1987/86
	($ 000)		(%)
Taxes[5]	49 971	38 656	-22.64
Gross Farm Rent	107 296	97 694	-8.95
Wages to Farm Labour	480 806	500 038	4.00
Interest on Indebtedness[6]	402 293	334 701	-16.80
Total Machinery Expenses[7]	470 095	467 163	-0.62
Fertilizer & Lime[8]	256 049	226 111	-11.69
Other Crop Expenses[9]	297 211	313 065	5.33
Feed[10]	660 974	620 655	-6.10
Other Livestock Expenses[11]	281 229	269 984	-4.00
Repairs to Buildings[5]	81 501	85 169	4.50
Electricity and Telephone	114 150	121 189	6.17
Miscellaneous[12]	343 878	328 344	-4.52
Total Operating Expenses	3 545 453	3 402 769	-4.02
Depreciation on Buildings	156 528	162 789	4.00
Depreciation on Machinery	445 934	439 545	-1.43
Total Op. Expenses & Dep. Charges	4 147 915	4 005 103	-3.44
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	5 508 704	5 638 154	2.35
Plus Income-in-Kind	66 002	69 208	4.86
Realized Gross Income	5 574 706	5 707 362	2.38
Less Op. Expenses & Dep. Charges	4 147 915	4 005 103	-3.44
Realized Net Income	1 426 791	1 702 259	19.31
Plus Value of Inventory Change	-371 268	-60 106	-83.81
Total Net Income	1 055 523	1 642 153	55.58

See notes at end of tables.

TABLE 8A FARM CASH RECEIPTS, 1986 AND 1987, MANITOBA

	1986	1987	Change 1987/86
		($ 000)	(%)
Wheat[1]	536 156	375 225	-30.02
Oats[1]	9 241	7 276	-21.26
Barley[1]	146 708	62 701	-57.26
Crop Insurance, Advances, Deferments and WGSA[2]	245 299	321 735	31.16
Rye	5 965	4 269	-28.43
Flaxseed	83 535	72 724	-12.94
Canola/Rapeseed	128 414	103 372	-19.50
Soybeans	–	–	–
Corn	7 029	5 599	-20.34
Sugar Beets	8 109	7 815	-3.63
Potatoes	36 715	43 318	17.98
Fruits	–	–	–
Vegetables	14 763	16 588	12.36
Tobacco	–	–	–
Other Crops	68 663	65 941	-3.96
Total Crops	1 290 597	1 086 563	-15.81
Cattle & Calves	294 352	260 291	-11.57
Hogs	241 855	251 053	3.80
Sheep & Lambs	1 840	1 751	-4.84
Dairy Products	106 782	109 820	2.85
Poultry	49 794	46 507	-6.60
Eggs	47 393	46 814	-1.22
Other Livestock	18 250	18 132	-0.65
Total Livestock	760 266	734 368	-3.41
Other Cash Receipts[4]	27 564	164 001	494.98
Total Cash Receipts	2 078 427	1 984 932	-4.50

TABLE 8B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARMING OPERATIONS, 1986 AND 1987, MANITOBA

	1986	1987	Change 1987/86
		($ 000)	(%)
Taxes[5]	38 491	31 765	-17.47
Gross Farm Rent	98 361	74 996	-23.75
Wages to Farm Labour	91 690	94 441	3.00
Interest on Indebtedness[6]	152 451	144 972	-4.91
Total Machinery Expenses[7]	273 253	276 385	1.15
Fertilizer & Lime[8]	198 446	172 251	-13.20
Other Crop Expenses[9]	159 534	155 036	-2.82
Feed[10]	121 137	111 446	-8.00
Other Livestock Expenses[11]	21 860	25 422	16.29
Repairs to Buildings[5]	26 421	27 346	3.50
Electricity and Telephone	33 820	35 929	6.24
Miscellaneous[12]	105 353	105 372	0.02
Total Operating Expenses	1 320 817	1 255 361	-4.96
Depreciation on Buildings	16 384	16 712	2.00
Depreciation on Machinery	253 505	245 386	-3.20
Total Op. Expenses & Dep. Charges	1 590 706	1 517 459	-4.60
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	2 078 427	1 984 932	-4.50
Plus Income-in-Kind	17 353	17 520	0.96
Realized Gross Income	2 095 780	2 002 452	-4.45
Less Op. Expenses & Dep. Charges	1 590 706	1 517 459	-4.60
Realized Net Income	505 074	484 993	-3.98
Plus Value of Inventory Change	-96 439	8 447	-108.76
Total Net Income	408 635	493 440	20.75

See notes at end of tables.

TABLE 9A FARM CASH RECEIPTS, 1986 AND 1987, SASKATCHEWAN

	1986	1987	Change 1987/86
	($ 000)		(%)
Wheat[1]	1 624 563	1 478 774	-8.97
Oats[1]	6 724	7 315	8.79
Barley[1]	270 930	175 669	-35.16
Crop Insurance, Advances, Deferments and WGSA[2]	886 971	810 946	-8.57
Rye	9 702	10 754	10.84
Flaxseed	51 440	43 174	-16.07
Canola/Rapeseed	263 094	333 689	26.83
Soybeans	–	–	–
Corn	–	–	–
Sugar Beets	–	–	–
Potatoes	7 188	7 918	10.16
Fruits	–	–	–
Vegetables	–	–	–
Tobacco	–	–	–
Other Crops[3]	100 006	83 805	-16.20
Total Crops	3 220 618	2 952 044	-8.34
Cattle & Calves	496 138	599 107	20.75
Hogs	108 164	114 576	5.93
Sheep & Lambs	1 804	2 263	25.44
Dairy Products	89 430	91 738	2.58
Poultry	31 766	30 130	-5.15
Eggs	18 742	18 877	0.72
Other Livestock	12 320	13 136	6.62
Total Livestock	758 364	869 827	14.70
Other Cash Receipts[4]	156 381	424 910	171.71
Total Cash Receipts	4 135 363	4 246 781	2.69

TABLE 9B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARMING OPERATIONS, 1986 AND 1987, SASKATCHEWAN

	1986	1987	Change 1987/86
	($ 000)		(%)
Taxes[5]	112 056	116 003	3.52
Gross Farm Rent	228 547	167 528	-26.70
Wages to Farm Labour	188 544	196 085	4.00
Interest on Indebtedness[6]	420 834	408 102	-3.03
Total Machinery Expenses[7]	632 053	629 206	-0.45
Fertilizer & Lime[8]	335 706	280 986	-16.30
Other Crop Expenses[9]	296 222	278 580	-5.96
Feed[10]	104 914	102 921	-1.90
Other Livestock Expenses[11]	27 290	32 201	18.00
Repairs to Buildings[5]	34 382	36 411	5.90
Electricity and Telephone	65 000	68 526	5.42
Miscellaneous[12]	274 948	245 966	-10.54
Total Operating Expenses	2 720 496	2 562 515	-5.81
Depreciation on Buildings	48 014	48 974	2.00
Depreciation on Machinery	628 346	616 478	-1.89
Total Op. Expenses & Dep. Charges	3 396 856	3 227 967	-4.97
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	4 135 363	4 246 781	2.69
Plus Income-in-Kind	41 764	43 525	4.22
Realized Gross Income	4 177 127	4 290 306	2.71
Less Op. Expenses & Dep. Charges	3 396 856	3 227 967	-4.97
Realized Net Income	780 271	1 062 339	36.15
Plus Value of Inventory Change	608 144	-102 187	-116.80
Total Net Income	1 388 415	960 152	-30.85

See notes at end of tables.

TABLE 10A FARM CASH RECEIPTS, 1986 AND 1987, ALBERTA

	1986	1987	Change 1987/86
	($ 000)		(%)
Wheat[1]	518 168	540 062	4.23
Oats[1]	17 213	18 492	7.43
Barley[1]	319 492	238 986	-25.20
Crop Insurance, Advances, Deferments and WGSA[2]	456 952	465 869	1.95
Rye	4 640	4 764	2.67
Flaxseed	5 376	5 506	2.42
Canola/Rapeseed	265 535	301 652	13.60
Soybeans	–	–	–
Corn	–	–	–
Sugar Beets	9 001	11 478	27.52
Potatoes	29 640	33 775	13.95
Fruits	–	–	–
Vegetables	30 181	31 836	5.48
Tobacco	0	0	–
Other Crops[3]	85 610	84 281	-1.55
Total Crops	1 741 808	1 736 701	-0.29
Cattle & Calves	1 105 843	1 203 711	8.85
Hogs	276 163	282 693	2.36
Sheep & Lambs	6 811	7 019	3.05
Dairy Products	223 658	220 414	-1.45
Poultry	85 527	83 923	-1.88
Eggs	46 838	47 300	0.99
Other Livestock	26 283	25 485	-3.04
Total Livestock	1 771 123	1 870 545	5.61
Other Cash Receipts[4]	270 094	318 336	17.86
Total Cash Receipts	3 783 025	3 925 582	3.77

TABLE 10B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARMING OPERATIONS, 1986 AND 1987, ALBERTA

	1986	1987	Change 1987/86
	($ 000)		(%)
Taxes[5]	51 715	54 301	5.00
Gross Farm Rent	179 036	139 185	-22.26
Wages to Farm Labour	211 975	220 454	4.00
Interest on Indebtedness[6]	409 098	397 236	-2.90
Total Machinery Expenses[7]	418 166	503 575	20.42
Fertilizer & Lime[8]	286 318	245 000	-14.43
Other Crop Expenses[9]	215 059	209 891	-2.40
Feed[10]	162 217	161 911	-0.19
Other Livestock Expenses[11]	122 866	171 895	39.90
Repairs to Buildings[5]	49 378	51 106	3.50
Electricity and Telephone	63 766	67 660	6.11
Miscellaneous[12]	249 337	234 080	-6.12
Total Operating Expenses	2 418 931	2 456 294	1.54
Depreciation on Buildings	92 848	94 705	2.00
Depreciation on Machinery	550 263	539 259	-2.00
Total Op. Expenses & Dep. Charges	3 062 042	3 090 258	0.92
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	3 783 025	3 925 582	3.77
Plus Income-in-Kind	35 999	37 787	4.97
Realized Gross Income	3 819 024	3 963 369	3.78
Less Op. Expenses & Dep. Charges	3 062 042	3 090 258	0.92
Realized Net Income	756 982	873 111	15.34
Plus Value of Inventory Change	450 406	-32 709	-107.26
Total Net Income	1 207 388	840 402	-30.40

See notes at end of tables.

TABLE 11A FARM CASH RECEIPTS, 1986 AND 1987, BRITISH COLUMBIA

	1986	1987	Change 1987/86
	($ 000)		(%)
Wheat[1]	10 719	5 549	-48.23
Oats[1]	910	956	5.05
Barley[1]	6 246	4 678	-25.10
Crop Insurance, Advances, Deferments and WGSA[2]	24 472	17 615	-28.02
Rye	30	52	73.33
Flaxseed	-	-	-
Canola/Rapeseed	3 290	4 573	39.00
Soybeans	-	-	-
Corn	-	-	-
Sugar Beets	-	-	-
Potatoes	21 852	21 310	-2.48
Fruits	108 597	119 695	10.22
Vegetables	72 691	75 112	3.33
Tobacco	-	-	-
Other Crops[3]	102 849	117 798	14.53
Total Crops	351 656	367 338	4.46
Cattle & Calves	154 040	178 197	15.68
Hogs	54 499	49 691	-8.82
Sheep & Lambs	1 632	2 068	26.72
Dairy Products	231 737	233 827	0.90
Poultry	101 533	105 229	3.64
Eggs	58 886	58 047	-1.42
Other Livestock	17 018	24 822	45.86
Total Livestock	619 345	651 881	5.25
Other Cash Receipts[4]	55 985	39 832	-28.85
Total Cash Receipts	1 026 986	1 059 051	3.12

TABLE 11B FARM OPERATING EXPENSES, DEPRECIATION CHARGES, AND NET INCOME FROM FARM OPERATIONS, 1986 AND 1987, BRITISH COLUMBIA

	1986	1987	Change 1987/86
	($ 000)		(%)
Taxes[5]	14 807	15 858	7.10
Gross Farm Rent	18 058	17 140	-5.08
Wages to Farm Labour	153 866	161 559	5.00
Interest on Indebtedness[6]	121 523	112 957	-7.05
Total Machinery Expenses[7]	95 230	97 285	2.16
Fertilizer & Lime[8]	29 225	25 329	-13.33
Other Crop Expenses[9]	38 440	40 359	4.99
Feed[10]	117 695	108 162	-8.10
Other Livestock Expenses[11]	20 593	26 340	27.91
Repairs to Buildings[5]	15 165	15 696	3.50
Electricity and Telephone	22 343	22 343	0.00
Miscellaneous[12]	48 195	49 543	2.80
Total Operating Expenses	695 140	692 571	-0.37
Depreciation on Buildings	31 418	32 046	2.00
Depreciation on Machinery	76 500	74 724	-2.32
Total Expenses & Dep. Charges	803 058	799 341	-0.46
INCOME OF FARM OPERATORS FROM FARMING OPERATIONS			
Cash Receipts	1 026 986	1 059 051	3.12
Plus Income-in-Kind	19 161	19 338	0.92
Realized Gross Income	1 046 147	1 078 389	3.08
Less Op. Expenses & Dep. Charges	803 058	799 341	-0.46
Realized Net Income	243 089	279 048	14.79
Plus Value of Inventory Change	5 421	3 857	-28.85
Total Net Income	248 510	282 905	13.84

See notes at end of tables.

NOTES

[1] Includes Canadian Wheat Board payments and Ontario Wheat Producers Marketing Board payments.

[2] Includes net cash advances on farm-stored grains and deferred grain receipts plus payments under the Western Grain Stabilization Act to producers in Western Canada and crop insurance payments.

[3] Includes cash receipts from floriculture and nursery, mustard, sunflower, non-grain advances, clover and grass, hay and clover, dry beans, dry peas, and miscellaneous crops.

[4] Includes receipts from the sale of forest and maple products, as well as dairy supplementary payments, deficiency payments, provincial income stabilization payments, and other supplementary payments made by the federal and provincial goverments.

[5] Owned land and buildings only.

[6] Interest payments on outstanding farm mortgage debts for owned land and buildings, together with interest payments on all other farm business debts, adjusted for interest rebates.

[7] For farm business uses of fuel and machinery repairs.

[8] Adjusted for fertilizer and lime rebates.

[9] Includes pesticides, seed, irrigation, twine, wire and containers, adjusted for pesticide rebates.

[10] Purchases through commercial channels only, ajusted for feed rebates.

[11] Includes livestock purchases, artificial insemination charges, purebred livestock registration fees and veterinary expenses.

[12] Includes fencing, custom work, heating fuel, stabilization levies, insurance premiums and other expenses not previously specified.

1988 Farm Income Outlook

HIGHLIGHTS

Realized net farm income for 1988 is forecast at $5.27 billion, a decrease of 8.3% from the 1987 level. This forecast incorporates the federal assistance measures announced December 15, 1987. Little change in cash receipts and higher farm expenses account for the overall decline.

There is a wide variation in provincial income prospects. Declines in realized net farm income are forecast for all provinces except British Columbia, Alberta and Newfoundland.

Total farm cash receipts for 1988 are expected to remain unchanged at $20.9 billion, the result of stable crop receipts, lower livestock receipts and higher program payments.

Forecast declines in market receipts from grains and oilseeds and potatoes should be partially offset by increases in program payments including the extended Special Canadian Grains Program and the payment for the 1985-86 potato crop under the Agricultural Stabilization Act.

Livestock receipts are forecast to decrease by 1.9% from 1987 levels to $10.3 billion, with expected declines in cattle and hog receipts. Dairy and poultry receipts are forecast to increase marginally.

Farm operating expenses and depreciation charges for 1988 are expected to increase for the first time since 1985. Higher expenditures for almost all farm inputs, including feed, fertilizer, hired labor and machinery repairs, are forecast to raise total operating expenses and depreciation charges by 3.2%to $15.9 billion.

OUTLOOK

The 1988 farm income forecast is prepared by Agriculture Canada in collaboration with the Farm Income and Prices Section of Statistics Canada and the provincial Ministries of Agriculture. This farm income forecast incorporates the latest outlook for the general economy, farm commodities, farm inputs and payments from federal and provincial government programs. The new federal assistance measures announced December 15, 1987, including a $1.1 billion payout under the extended Special Canadian Grains Program, have also been taken into account.

Realized net farm income

Realized net farm income for 1988 is forecast to decrease by 8.3% to $5.27 billion from the estimated $5.75 billion for 1987 (see attached tables). The decrease from the 1987 income estimate is attributable to a forecast reduction in cash receipts from markets and an increase in operating expenses. Changes in realized net farm income for 1988 vary substantially among provinces. The largest decreases are forecast for Prince Edward Island (-42.0%), followed by Manitoba (-19.4%), Quebec (-14.4%) and New Brunswick (-12.7%). The only provinces expected to register significant increases in realized net farm income in 1988 are British Columbia (+8.7%) and Newfoundland (+4.4%).

Farm cash receipts

Total farm cash receipts, including government program payments, for 1988 are forecast at $20.9 billion, virtually unchanged from the 1987 level. Of the three major receipt components, crop receipts remain stable, livestock receipts are expected to decline by about 2% while other cash receipts (mainly program payments) are expected to increase by almost 12%.

Market receipts from grains and oilseeds are forecast to decline by almost 4% in 1988, the result of further price declines. Depressed market receipts for the 1987-88 grain crop will trigger large Western Grain Stabilization (WGSA) payments in 1988, which will partially offset the lower market receipts. With the announced extension of the Special Canadian Grains Program, total program payments to grain producers will be close to the 1987 level.

Unfavorable prospects for potato prices suggest a substantial decline in 1988 receipts. However, the sharp drop in market receipts will be partially offset by the announced $17.1 million payment under the Agricultural Stabilization Act for the 1985-86 crop.

On a more positive side, receipts for many horticulture and special crops are expected to increase moderately through higher marketings and generally stable prices. Cash receipts from tobacco are forecast to remain near the 1987 level despite some drop in production, the result of falling demand.

Following several years of gains, receipts from livestock and livestock products are forecast to decline slightly to $10.3 billion for 1988. Cattle and calf receipts should decrease moderately as continued herd rebuilding limits beef supply. The substantial reversal in hog prices is expected to sharply decrease receipts despite a forecast increase in production. Dairy receipts will likely rise marginally because of little change in consumption and a small increase in net target returns. Poultry receipts are forecast to rise slightly, primarily because of higher chicken production. Little expected change in either production or prices suggest egg receipts will remain stable.

Farm expenses

Forecast higher prices for several of the major farm inputs combined with marginal increases in the utilization of some inputs suggest a moderate increase in total farm operating expenses for 1988. Total operating expenses and depreciation charges are forecast to increase by about 3% to $15.9 billion for 1988 after two consecutive years of declines in 1986 and 1987. Almost all expense items are forecast to increase; however, the expense items contributing most to the overall increase in farm expenses for 1988 are machinery repairs, farm wages, fertilizers, pesticides and feed.

The announced extension of the federal fuel sales tax exemption for on-farm use will serve to moderate an increase in fuel expenses, despite a forecast increase in fuel prices. Machinery repairs are forecast to rise moderately as farmers continue to maintain older equipment and postpone investment in replacements.

Price increases of 7% to 12% for fertilizer prices combined with little change in utilization are expected to moderately increase fertilizer expenditures at the national level, with somewhat higher increases in the East. Expenditures on pesticides are also expected to increase marginally, again because of higher prices. Higher average interest rates combined with some reduction in total farm debt are forecast to maintain interest payments at the 1987 level, following three consecutive years of declines. Feed expenses are forecast to increase marginally despite lower feed prices because of higher livestock numbers. Forecast increases in both wage rates and employment of hired workers are expected to cause a moderate rise in the farm wage bill. Land rent expenses and rental rates should stabilize following two years of sharp declines. Total depreciation charges are expected to remain at the 1987 level, given little changes in farm buildings and machinery prices and only marginal additions to capital stock.

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TABLE 1 FARM INCOME, CANADA AND PROVINCES, 1987 ($ million)

	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
Total crop receipts	6.7	103.7	55.2	89.9	502.8	1 826.7	1 086.6	2 952.0	1 736.7	367.3	8 727.6
Total livestock receipts	41.3	97.3	219.8	145.0	2 431.5	3 458.4	734.4	869.8	1 870.5	651.9	10 520.0
Other cash receipts[a]	.6	9.2	10.0	11.4	337.9	353.1	164.0	424.9	318.3	39.8	1 669.3
Total cash receipts	48.6	210.2	285.1	246.3	3 272.2	5 638.2	1 984.9	4 246.8	3 925.6	1 059.1	20 916.9
Income-in-kind	.6	2.5	6.7	3.7	63.0	69.2	17.5	43.5	37.8	19.3	263.8
Realized gross income	49.1	212.7	291.8	250.0	3 335.2	5 707.4	2 002.4	4 290.3	3 963.4	1 078.4	21 180.7
Operating expenses	33.6	127.8	175.2	148.0	1 978.3	3 402.8	1 255.4	2 562.5	2 456.3	692.6	12 832.5
Depreciation charges	1.9	17.9	21.5	18.5	267.0	602.3	262.1	665.5	634.0	106.7	2 597.4
Total operating and depreciation charges	35.5	145.7	196.7	166.5	2 245.3	4 005.1	1 517.5	3 228.0	3 090.3	799.3	15 429.9
Realized net income	13.6	66.9	95.1	83.5	1 089.9	1 702.3	485.0	1 062.3	873.1	279.0	5 750.7
% change in realized net income (1987/86)	+3.8	+50.3	+24.5	+33.5	+4.9	+19.3	−4.0	+36.1	+15.3	+14.8	+16.2
Value of inventory change	.6	−9.4	2.2	7.9	−12.7	−60.1	8.4	−102.2	−32.7	3.9	−194.1
Total net income	14.2	57.5	97.3	91.3	1 077.2	1 642.2	493.4	960.2	840.4	282.9	5 556.6

[a] Includes maple and forest products, and payments directly paid to producers under provincial income stabilization, dairy supplementary, agricultural stabilization, tripartite and other supplementary programs including the Special Canadian Grains Program.

TABLE 2 FARM INCOME FORECAST, CANADA AND PROVINCES, 1988 ($ million)

	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
Total crop receipts	7.0	76.0	56.5	78.1	498.0	1 982.2	1 007.2	2 893.8	1 777.3	376.9	8 753.1
Total livestock receipts	42.3	94.6	218.6	143.5	2 370.3	3 370.0	688.6	874.2	1 865.2	650.9	10 318.3
Other cash receipts[a]	0.9	18.7	16.5	19.3	338.4	347.5	214.9	493.0	351.4	61.2	1 861.6
Total cash receipts	50.2	189.3	291.6	240.9	3 206.7	5 699.7	1 910.7	4 261.0	3 993.9	1 089.0	20 933.0
Income-in-kind	0.6	2.4	6.7	3.6	61.3	67.6	16.7	42.7	37.4	19.0	257.9
Realized gross income	50.8	191.7	298.3	244.5	3 267.9	5 767.3	1 927.4	4 303.6	4 031.3	1 108.0	21 190.9
Operating expenses	34.6	135.0	183.3	153.0	2 066.6	3 586.7	1 275.0	2 663.4	2 520.3	697.1	13 315.0
Depreciation charges	1.9	17.9	21.7	18.6	268.5	606.5	261.4	664.1	634.9	107.7	2 603.2
Total operating and depreciation charges	36.6	153.0	205.0	171.6	2 335.1	4 193.2	1 536.4	3 327.5	3 155.2	804.7	15 918.2
Realized net income	14.2	38.8	93.4	72.9	932.8	1 574.2	391.0	976.1	876.1	303.3	5 272.7
% change in realized net income (1988/87)	+4.4	−42.0	−1.8	−12.7	−14.4	−7.5	−19.4	−8.1	+.3	+8.7	−8.3
Value of inventory change	–	–	–	–	–	–	–	–	–	–	–
Total net income	–	–	–	–	–	–	–	–	–	–	–

[a] Includes maple and forect products, and payments directly paid to producers under provincial income stabilization, dairy supplementary, agricultural stabilization, tripartite and other supplementary programs including the extended Special Canadian Grains Program.

Food Markets Outlook

Brian Davey[*]

INTRODUCTION

The aim of this article is to provide an overview of the outlook for food markets in 1988; that is, the outlook for retail food prices, food and beverage processing and food retailing. A more in-depth analysis can be found in the December 1987 issue of *Food Market Commentary*. I am indebted to Sushma Barewal and Pamela Cooper and to other colleagues in the Food Markets Analysis Division of Agriculture Canada for their assistance in preparing this article.

My presentation is in two parts. First, I will describe the assumptions on which the outlook is based. Second, I will present the outlook itself. I can say now, however, that we are forecasting retail food prices to increase by between zero and 2% in 1988, compared with about 4% in 1987. The outlook for food processing and retailing is also quite positive. Let me explain the reasons behind this outlook.

ASSUMPTION UNDERLYING THE 1988 OUTLOOK

The 1988 food markets outlook is based on forecasts of various macroeconomic and marketing cost factors and projections of commodity supplies and prices. Following our normal practice, the macroeconomic and cost forecasts are taken from the October 1987 forecast by the Conference Board of Canada. The Commodity projections are those of Agriculture Canada's commodity analysts. I will now run quickly through the assumptions.

First, it is expected that the Canadian dollar will continue to trade at around 75 to 77 cents U.S. in 1988. The 4% appreciation of our dollar vis-à-vis its American counterpart this year has been a moderating influence on food price increases, and the effect of the stronger dollar will carry over into 1988.

Second, so far as interest rates are concerned, the Conference Board of Canada's October forecast was for an average prime rate of about 10.5% in 1988, up slightly from the 1987 level. However, this forecast was made before the stock market crash on October 19, and may have been overtaken by events; the prime now stands at 9.75%, compared with 10.5% before Black Monday.

Third, with regard to labor costs, wage settlements in the first six months of 1987 are the precursors of labor cost increases in 1988. In most industries, these increases have been larger than those in 1986. For example, in food processing and wholesaling, the increases were 4.3% and 2.9%, respectively, compared with 3.9% and 2.6% a year earlier. In food retailing, however, first-half settlements averaged only 1.7% higher. Wage increases are an important consideration in the food outlook because labor costs are a very important cost factor, accounting for about 55% of food marketing costs, excluding the cost of the raw product. For the economy as a whole, the Conference Board of Canada is forecasting average hourly earnings to rise by 4.9% in 1988, compared with 4.1% in 1987.

Fourth, energy prices are expected to be relatively stable after the volatility of recent years. Crude oil prices are forecast to increase by 5% next year, while natural gas and electricity prices are expected to rise by 1.9% and 3.4%, respectively. Fifth, prices of packaging materials used by food and beverage processors are expected to rise by 3% to 4% in 1988 about the same rate as in 1987. Sixth, higher energy prices and labor costs are expected to lead to increases in transportation costs of about 4% to 5%, which is similar to the expected overall rate of inflation.

Seventh, changes in consumer incomes and expenditures influence the demand for food and, hence, food prices. Real personal disposable income is forecast to grow by 3.3% in 1988, up from 1.4% in 1987, as the first stage of tax reform lowers income taxes for many Canadians. Consumer expenditures on goods and services are expected to increase by 3% in real terms, down from 3.9% in 1987, as consumers increase their savings rate slightly. Food purchased from restaurants and value-added convenience products may be among the main beneficiaries of the increase in consumer expenditures next year. Overall, however, the level of income growth forecast by the Conference Board of Canada is not expected to exert any significant upward pressure on food demand and prices.

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[*] Agriculture Canada.

Finally and very briefly, with regard to commodity prices, hog prices will be down significantly in 1988 because of increased supplies. The prices of other livestock and livestock products are expected to show little change as feedgrain prices remain near current levels and as the effect of lower beef production is offset by increased pork and poultry production. With larger crops this year, prices of domestically grown fresh fruits and vegetables will be lower than in 1987. Edible oil prices are likely to be under downward pressure from large world supplies. Raw sugar prices are expected on average to be similar to 1987 levels.

In summary, therefore, the outlook for food in 1988 is based on a continuation of moderate increases in most food marketing costs, relative stability in interest and exchange rates and lower or stable commodity prices. Real personal incomes will increase more than in 1987.

1988 OUTLOOK

Given these assumptions, I will now present, in turn, the outlook for food and beverage processing, food retailing and retail food prices in 1988.

The indications are that food processors should experience a relatively good year in 1988. Cost increases are expected to be moderate. Shipments are expected to increase, possibly at a faster rate than in 1987, reflecting a shift in consumer spending growth from durables to nondurable goods. However, growth in the quantity of food purchased is likely to be very small. It is more likely that the real growth in spending will result from a change in the mix of food purchased as the industry introduces more higher value-added convenience products. Financial returns for the industry could be quite favorable. The overall positive outlook for the processing industry is reflected in food processors' investment plans, which indicate that investment spending in 1987 is up significantly from 1986 levels.

The outlook for beverage processors next year is also determined by input costs and market demand. However, it is not so optimistic. Input cost increases are expected to be modest. Market demand for beverages has been relatively flat with the slowly growing and aging population and the trend toward lower per-capita consumption of alcoholic beverages. Although beverage processors are responding to these trends by introducing light and low-alcohol products, further growth in this market will likely be slow and difficult to achieve.

The outlook for food retailing appears to be quite positive. Retail food sales are expected to increase in real terms in 1988 as the mix of food purchased from stores continues to include more higher-valued prepared foods. The moderate increases expected in food industry product prices next year mean there will be only modest upward pressure on the cost of goods sold by retailers. The turnaround in profitability experienced by food retailers in 1986 and the first half of 1987 should carry forward into 1988. Competition among retailers for the consumer's food dollar, focusing on quality and service aspects as much as or more than on price, will continue to be intense.

Finally, retail food prices are expected to increase by zero to 2% next year, compared with about 4% in 1987. Prices for food purchased from stores should remain relatively unchanged, while those for food purchased from restaurants could increase by 2% to 4%.

So far as the major food groups are concerned, large decreases in retail prices for fresh pork and cured meats are expected on a year-over-year basis as a consequence of the sharp increase in North American hog production and decline in hog prices. Smaller decreases are forecast for poultry prices, especially chicken, as supplies increase and as demand weakens in response to lower pork prices. Retail prices for apples, potatoes and storage vegetables should be below those of 1987 as a result of larger supplies. For the other food groups, modest increases of up to 5% are expected.

As with any forecast, there are a number of risks and uncertainties associated with the 1988 food price outlook. First, adverse growing conditions in both Canada and the U.S. can have dramatic and unpredictable effects on fresh fruit and vegetable supplies and prices. Second, if U.S. pork production does not increase as fast as expected, the decrease in retail pork prices could be less than forecast and there would be more demand pressure on beef and poultry prices. Third, if the performance of the Canadian dollar against the U.S. dollar differs from the trend expected, this too will affect the forecast.

So far as 1989 is concerned, we expect the rate of increase in retail food prices to be somewhat higher than that in 1988. This is due partly to a continuation of moderate increases in food marketing costs, roughly in line with general inflation, partly to the expectation of continued weak but positive growth performance by the Canadian economy, and partly to stable red meat prices, especially for pork. However, food price increases in 1989 are still likely to be relatively modest, compared with 1986 and 1987 levels when food prices increased 4% to 5%.

Canadian Agricultural Trade Outlook

*Michael N. Gifford**

The 1987 Canadian Agricultural Outlook Conference was scheduled on the first full working day after the release of the legal text of the Canada-U.S. free trade agreement. In order to put any questions concerning the free trade agreement into some kind of a context, I will briefly describe the situation in 1987 for Canada's agricultural trade situation, explain what is expected to happen in calendar year 1988, and give some educated guesses about what the future might hold as we move into the 1990s.

Figures 1, 2 and 3 show that Canada's agricultural trade performance in 1987 turned around and the trade surplus started to increase. This might be surprising to many people given the fact that, as many are well aware, the international grain market in particular has been abnormally depressed and prices have been at all-time record lows. To some extent we have managed to offset those price declines by increased volume. For example, wheat exports in 1987 hit 23 Mt. Helping that positive trade surplus, of course, was the continued strength in the livestock and red meat sector. Our agricultural trade surplus is expected to increase again in calendar year 1988. World economic conditions are expected to be characterized by modest economic growth, low average inflation rates and relatively high real interest rates. However, it would appear that by and large the international price situation for agricultural commodities, particularly the temperate agricultural products that Canada exports, is going to remain largely the same as last year's. On balance, a small increase in our net agricultural trade surplus is expected to continue. Agricultural exports in 1988 are expected to increase somewhat, perhaps by 4%, and imports are expected to increase by only about 3%. In total we are expecting a small increase in the agricultural trade surplus of about $200 million.

Before we get into the bilateral trade negotiations, it is worth very briefly recalling the commodity composition of Canadian agricultural exports. Nearly two thirds of our exports are grains and grain products. Most of those exports typically have gone to offshore markets. The United States is our fastest-growing, most diversified and our largest export market. But the key word here is diversification. Basically the United States takes the bulk of our nongrain and grain product exports. Over 50% of our exports to the United States are livestock and livestock products. In contrast, our commodity import composition is a real grab bag. We import everything from tropical products to a range of commodities that are either directly competitive with Canadian agricultural products or are supplementary, particularly the fruits and vegetables that come in during the off season. The United States consistently accounts for 50% to 55% of our agricultural imports. Both our export composition and our import composition have been relatively constant over the past four or five years, and this is expected to continue into the foreseeable future.

Turning now first of all to the Canada-U.S. free trade agreement, we now have a legal text. The legal text is to be signed by the Prime Minister and the President on or around January 2, 1988, and the free trade agreement will come into effect on January 1, 1989. What does it mean for Canadian agriculture? The agenda of the bilateral negotiations for agriculture was exactly the same as the agenda envisaged for the multilateral trade negotiations. The first item on the agenda was improved and secure access, which includes reducing and eliminating tariffs as well as reducing and eliminating nontariff measures at the border. The second agenda item was subsidies, both export and domestic. It has taken a long time for people to realize this, but there is now a widespread recognition that some domestic agricultural subsidies can be just as trade-distorting as direct export subsidies. The third element of the agenda was technical regulations. Here the concern is how to minimize the risks that technical regulations can be used as disguised barriers to trade. I will now deal very briefly with each of these three areas to show how the Canada-U.S. free trade agreement turned out.

On tariffs, every agricultural and every industrial tariff is going to be eliminated. There are absolutely no exceptions to this. Virtually all of the agricultural tariffs are going to be phased out over a 10-year period. Not as much progress was made on nontariff measures at the border. From the point of view of quantitative import restrictions, for example, the U.S. import restrictions on sugar and sugar-containing products and daily products remain largely unchanged, and the same can be said for Canada's import quotas on dairy products, poultry and eggs.

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*Trade Negotiation Office.

With regard to subsidies, export subsidies between the two countries are going to be prohibited when the agreement comes into effect. Insofar as export subsidies to third countries are concerned, there is a provision in the agreement that both countries will take the export interests of the other into account in terms of their shipments of subsidized exports to third countries. Unfortunately, the reality is that export subsidies to third countries and domestic agricultural subsidies are two issues that simply were not capable of being resolved in a strictly bilateral context. There simply was not sufficient critical mass in the bilateral negotiations to come to grips with export subsidies to third markets or, for that matter, to come to grips with the trade impact of domestic agricultural subsidies. It is clear that, if those issues are going to be addressed, they are going to have to be addressed in global forum where all countries, all commodities and all measures affecting agricultural trade can be discussed.

On the third item, technical regulations, a lot of progress was made in this area. The use of technical regulations as disguised trade barriers will be prohibited and our technical people will be encouraged to work toward increased harmonization and, where harmonization is not possible, to try to agree on equivalency. The bottom line is that the two countries have agreed to try to minimize the adverse effect on trade of those technical regulations necessary to protect human, animal and plant health.

In terms of the concerns that were expressed by a number of people in the industry about what could happen, we are no longer dealing with speculation. The facts of the legal agreement are before us, and I think it is pretty categorical. Very explicitly, nothing in this agreement affects the supply management programs of Canada or the ability of Canada to introduce new supply management programs, if that is what the country desires. By and large, agricultural subsidies will have to be addressed in the multilateral trade negotiations. What we have largely is a tariff negotiation, backed up with some good improvements in the technical regulations side and some modest disciplines on subsidies.

As for tariffs, to put it into some kind of historical perspective, for 40 years Canada and the United States in successive GATT negotiations have been reducing and harmonizing agricultural tariffs. In contrast to the situation in the industrial sector where the industrial tariff in Canada is something in the order of 10% to 11% and the industrial tariff in the United States is about 3%, in agriculture, because of seven previous GATT rounds of negotiations and because we have tended to work toward harmonization and making those tariffs equivalent, we have roughly equal agricultural tariffs on both sides of 6% on average. Put in a 40-year context, what we have simply done in the Canada-U.S. negotiations is to move that process to its logical conclusion by eliminating all tariff barriers to agricultural trade.

On subsidies, there are few disciplines. For example, Canada has agreed not to provide WGTA payments on agricultural products shipped via west coast ports to the Pacific Northwestern United States. In effect, we have reestablished the situation that prevailed when we had the Crow. There are no changes in the WGTA with regard to shipments to offshore markets via west coast ports or shipments to all destinations via Thunder Bay.

As for the concerns of the industry in terms of adjustment, I think there is nothing really in this agreement that is going to materially affect the underlying fundamentals that are impacting on Canadian agriculture. Regarding fruits and vegetables, the shift has been away from canned to frozen and increasingly more and more to fresh. There is nothing in the agreement that is going to stop or prevent that kind of a shift from continuing in the future. Most of the changes are gradual and will be felt over time. There are lots of opportunities and there will be some adjustments. Even though tariffs between the two countries are low on average, there are peaks. If you are a mushroom grower, for example, you are facing a tariff of 5 cents per pound plus 25% going into the United States. That is over 30%. If you are shipping spinach, it is 25% going into the United States. Broccoli is 25%. Even though the current tariffs between the two countries are relatively low on average, the agreement will provide new opportunities for a range of products that till now did not think about exporting because of the high U.S. tariff.

The deal that was struck in the agricultural sector has to be assessed in terms of how it affects the agricultural sector in the aggregate. On balance, is it a good deal? Obviously I have a bias, but I think that if people are going to judge the deal as it affects agriculture, it should not be judged on a subsector-by-subsector basis. The only possible way to assess the impact of this deal on Canadian agriculture is to take it on a national basis, taking into account regional considerations and the various commodity considerations, and ask whether this deal benefits the Canadian agricultural sector. You cannot do a self-balancing deal on fruits and vegetables, livestock or grains separately. You have to assess the agricultural deal as a package.

Looking briefly at the multilateral round of negotiations, if you are a cynic, you will probably say that the experience of the last 40 years suggests there is no reason why things should get any better in agricultural trade. We have had seven previous rounds of GATT negotiations and, apart from the Canada-U.S. agricultural tariff negotiations, which were significant, by and large agriculture was left out of the GATT. It was on the sidelines. Quite frankly, the reason is that the governments of the industrialized countries, when push came to shove, simply were not prepared to deal with agriculture. It was simply too politically sensitive. We are paying for it now, because for 40 years the situation has been allowed to fester.

In the past, agricultural policies all around the industrialized world have been set as if each country existed in a vacuum. Recalling the auto route analogy, it was as if everyone thought he had the only car on the road. Few countries cared what the impact or the consequences of their domestic agricultural polices were on the international environment. So what we have is a situation that has become progressively worse, but there is a light at the end of the tunnel. I think it can fairly be said that in the last 12 months there has been a discernable improvement in the way the governments of the industrialized countries are looking at agricultural trade. For the first time in 40 years, there appears to be a consensus developing among industrialized countries that agricultural trade has been allowed to get out of hand; that the domestic agricultural policies, which in turn affect the trade measures at the border, are not doing the job the governments want them to do; that increasingly we have had a war of treasury against treasury; and that countries not able to afford to keep up with this subsidy war have been forced into virtual bankruptcy. Here I am thinking about a number of the developing countries. It is fair to say that there is evidence that, for the first time in 40 years, governments are at least prepared to sit down in Geneva and to say they know that the underlying problems involve the level of support, the level of protection given to our domestic agriculture over the years and their respective unwillingness to try to deal with these problems collectively. The solutions are not going to be easy and they are not going to be implemented fast. But solutions have to come because no country, least of all the United States or the European Economic Community, can really afford to continue the status quo. The status quo is not a viable option for the major powers and it certainly is not an option for Canada, Australia, Argentina or Brazil, countries which have an overwhelming dependence on agricultural trade.

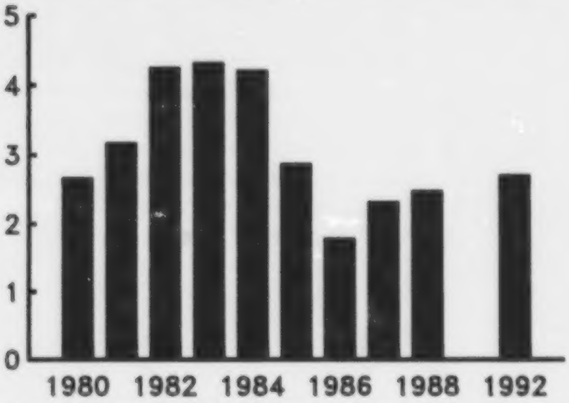
A lot of countries will be concerned when people start talking about discussing domestic agricultural policies in Geneva. What does this mean? It certainly does not mean that governments are going to get out of agriculture. Governments today are saying that there has to be a better way of supporting their rural sectors. Governments must provide their support in a less trade-distorting way. The challenge to be faced in Geneva in the coming years is to try to develop a set of rules to provide improved and more secure access to markets and to agree on improved rules governing subsidies, both export and domestic.

Very briefly, the timetable for all this calls for a mid-term review of the so-called Uruguay Round of multilateral trade negotiations in December 1988. The mid-term Ministerial review will probably occur in Canada. At that meeting it is hoped that, insofar as agriculture is concerned, there will be agreement at least on a framework in a manner analogous to the elements agreement we reached in Washington on October 4 in the bilateral negotiations. Hopefully there will be agreement on at least the broad parameters, the broad outline of a deal on agriculture by this time next year. This is an extremely ambitious objective, but it is an objective that increasingly people are beginning to believe is an achievable objective. Following that, you are probably looking at 1990 or 1991 for implementation of the MTN results.

I should add that one thing that could affect us in a much shorter timeframe than 1991 is the desire of a number of countries, including the European Economic Community, Australia, Argentina and Brazil as well as Canada, to improve the market situation in the short term. For example, in grains we have such fundamental disequilibrium in supply and demand that slow, gradual changes in domestic and trade policies are not going to have much of an immediate impact. Therefore it might be necessary to give the sector a kick start by taking some short-term measures on a commodity basis, hopefully sometime in 1989 to try to get those international markets for the commodities in the worst mess back into some semblance of normality.

Obviously there is a great risk of becoming so preoccupied about dealing with the short term that where you want to be in the long term is forgotten. Thus, all countries sharing the desire to reform agricultural trade are very much aware that, although it would be desirable to do something in the short term as fast as possible in 1989 or 1990, this should not be at the expense of reaching fundamental reforms in world agricultural trade.

FIGURE 1 AGRICULTURAL TRADE SURPLUS ($ million)*



* Projected values for 1987, 1988 and 1992.

FIGURE 2 CANADIAN AGRICULTURAL EXPORTS BY MAJOR COMMODITY GROUPINGS ($ million)

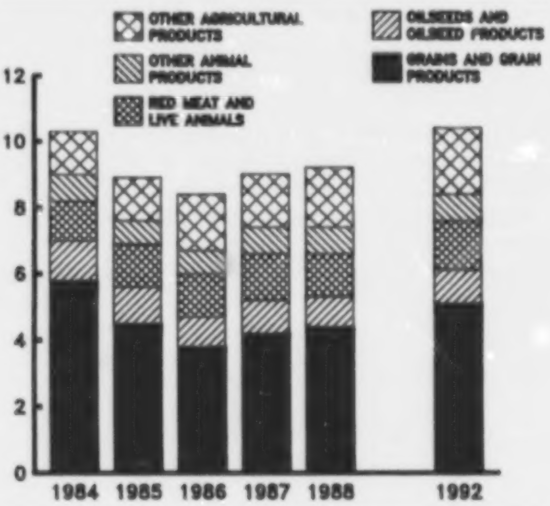
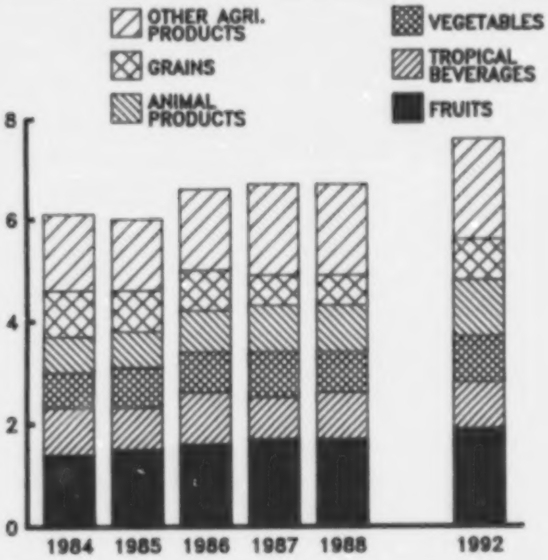


FIGURE 3 CANADIAN AGRICULTURAL IMPORTS BY MAJOR COMMODITY GROUPINGS ($ million)



PLENARY SESSION III

Summary of the Concurrent Sessions

J.E. McGowan[*]

Included in the Program for the 1987 Canadian Agricultural Outlook Conference were seven concurrent sessions. Four dealt with the concerns of specific commodity groups: grains and oilseeds, livestock and poultry, milk and dairy, horticulture and special crops. The other three sessions looked at farm costs and income, food, and the family farm.

Many participants had a difficult time in making up their minds which session to attend. Since it was physically impossible to attend them all, we are presenting a brief wrap-up of the presentations and discussions.

The *Livestock and Poultry* session considered the evolution of the sectors. With regard to cattle, whereas there was significant change between 1976 and 1981, changes have been minimal since then. The industry is getting more specialized by enterprise with fewer combined cow-calf-feeder operations. Cow herd size is stable and the national distribution is unchanged between two thirds western and one third eastern. It is interesting to note that although the inventory of beef animals is the same now as it was in 1970, beef production has increased by about 20%, so we are producing not only a leaner beef animal but a much meatier one.

Charles Gracey identified as trends or concerns: a shift of beef production, particularly toward Alberta; a serious balkanization in the industry and the need for a national stabilization program to resolve it; a major consolidation in feedlot operations; improved marketing practices for beef and a resulting image improvement for the commodity; and more innovation within the cattle industry.

The hog sector continues to change significantly, since we now produce hogs on half as many farms as in 1976. There is a strong trend toward farrow-to-finish operations at the expense of specialized operations. Martin Rice attributed this move to the reduced disease loss risks associated with closed operations. Concentration in the hog industry has decreased overall because of a significant breaking up of large operations in Quebec after the introduction of a provincial stabilization program with herd size limits in 1981. Martin Rice also felt that, as is apparently the case in poultry, there are limits to the economies of size in hog operations. Environmental concerns are also a factor for both farm size and industry growth in some areas.

The beef and pork sectors remain predominantly made up of family enterprises with no trend evident toward corporate enterprises or off-farm work. There does not appear to be any significant financial stress in the sector with the exception of the very large hog operations.

Consolidation in the poultry and egg sectors has slowed since supply management was introduced, but it continues to occur. The control of consolidation or rationalization is provincial through quota allocations and depends on policy rather than market forces. This is not the case for turkeys, where concentration has decreased since 1981 at least in part because of the mandatory issuance of growth in production quota to new entrants. Garth Coffin confirmed the reduction in the number of smaller farms and added that economic factors are also affecting the larger operations as a result of a leveling of the rate of economies of scale for the very large operations.

There was disagreement on the rate of producer renewal within the chicken and egg industries based on the age distribution of quota holders. The regional distribution of quota, and therefore production, has not changed. Garth Coffin made a case for the need to consider costs incurred beyond the farm gate when analyzing consumer costs for poultry products.

In the *Grains and Oilseeds* session, the emphasis was on the greater variety of policy options now under consideration in exporting countries, and in selected importing countries to alleviate the effects of the current crisis in the grain market. There was a recognition that some separation between commercial and social support for agriculture is gaining favor, through such methods as "extensification" and "decoupling." It was noted that efforts to increase exports have proved costly and do not seem to have generated any overall increase in trade.

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[*] Senior Assistant Deputy Minister, Agriculture Canada.

Also noted were the several divergent proposals presented to the General Agreement on Tariffs and Trade (GATT) to limit government support for agriculture.

The speaker from Argentina noted that the export value of Argentinian grains declined by 60% in the last two years. The Argentinian economy has even fewer resources to cope with this crisis than the other exporters. Nevertheless, corrective measures have been recently introduced in that country to combat the crisis.

In the grains and oilseeds session, the European Economic Community's (EEC) cereal production and consumption was put into a world context. It was pointed out that the EEC cereal import and export policies must be considered in relation to pressures of both stocks and budgetary expenditures. Changes in EEC cereal policy currently under debate were examined. The attitude of European farmers toward international trade and the most recent GATT round were also discussed. One of the other session speakers commented that the dramatic impact on Canadian grain producers of the current crisis has been well documented and that in 1987 Canadian farmers will incur a capital loss in the billions of dollars. The same speaker noted that public costs have been equally horrendous. He concluded his presentation by indicating that the future of the sector hinges on three factors:

- the basic demand and supply forces in a global context, with some strengthening of prices expected in 1988;
- the outcome of current grain export subsidy competition and the battle for market share; and
- early progress in the GATT negotiations in 1988.

The concurrent session on *Milk and Dairy Products* was chaired by David Rogers of the Prince Edward Island Department of Agriculture. Alvin Jory from the Ontario Ministry of Agriculture and Food responded to Agriculture Canada's outlook for the dairy sector.

In connection wih the free trade agreement, he raised concerns about the addition of some dairy products to the import control list. He asked about the implications of the subsidy provisions of the free trade agreement on Canadian dairy exports to the U.S. Mr. Jory also pointed out that the margarine-coloring restrictions in place in both Ontario and Quebec, which are thought to help butter consumption, are being challenged in the courts. He noted that further reductions in U.S. dairy support prices are likely under the 1985 Farm Bill provisions and the recent U.S. budget reduction agreement.

Richard Doyle of Dairy Farmers of Canada discussed changes in the structure of dairy production. First he forecast demographic changes through the year 2001 and concluded that per capita consumption of milk and dairy products is likely to fall from 2.89 hL per capita in 1986 to 2.73 hL per capita in 2001. He attributed this decline to the aging of the population.

Yield per cow is forecast to grow by 1.6% per year as a result of factors already present. But this yield will be accelerated further by the introduction of bovine somatotropin starting in 1990. The dairy herd is forecast to contract accordingly, falling by 29% to one million dairy cows by 2001. The number of producers is expected to fall by 40% by 2001, compared with the 1986 level, reaching 23 000, while the number of dairy cows per herd will rise from 34 cows in 1986 to 45 cows in 2001.

Looking at technology, there will be substantial adoption in the period to 2001 not only of bovine somatotropin, but also of on-farm computer technology to improve the efficiency of dairy operations. With regard to dairy policy, Mr. Doyle forecast that supply management will survive the pressures of 1990s but that the federal subsidy will continue to decline in importance, opening the way to more producer control at the national level. While expressing concerns that uncertainties associated with trade negotiations could discourage investment, he predicted increasing efficiency despite reduced volumes.

Kempton Matte of the National Dairy Council described the considerable rationalization in dairy plants that has occurred since 1965 and the current predominance of large cooperatives in many provinces currently, compared with the "family business" and "crossroads cooperative" structure prior to 1965. He detailed the major changes in distribution and retailing of food products and the dominance of the major buying groups acting on behalf retailers. These retailers now operate highly automated stores and judge profitability on an individual product line and store basis. He emphasized the need for market orientation by the industry, particularly in response to the competitive pressures flowing from the free trade agreement for the food industry generally.

Other participants raised the question of more pricing flexibility to enable differential butterfat pricing between dairy products for which demand is growing, such as cheese, and those for which demand is declining, such as butter. The possibility of providing a milk supply for new product markets was raised. This is expected to be considered by the federal-provincial supply management committee study team.

The concurrent session on *Horticulture and Special Crops* discussed among other things, the 1987 yield of tree fruits in Canada, which was average or above and of very good quality. Apple yield was near the long-term averages in all producing provinces, with the exception of Quebec where drought reduced yields. Peach and sweet cherry harvests were substantially larger than average and the Ontario sour cherry crop was very large resulting in reduced prices and large surpluses. With the exception of sour cherries in Ontario, marketing prospects are good with reasonable prices obtained. British Columbia apples are an exception because overproduction in Washington State has destabilized the western Canadian market and reduced prices. The apple market outlook to 1993 is for an increase in production of 10%. This will stretch the resources of the industry, and producers will need to carefully examine their requirements for capital expenditures on bins, cold storage and packing capacity. Marketing these larger crops will be a major challenge.

The outlook for pears, peaches, cherries and grapes is not clear and will be affected strongly by the Canada-U.S. free trade agreement. The elimination of seasonal tariffs, changes to nonstandard container legislation and possible introduction of consignment selling are issues of concern to the industry.

The major item discussed in this concurrent session regarding the vegetable industry was the issue of pesticides. The availability of effective pesticides was a critical production issue affecting yields, producer returns and consumer costs. In the future, pesticide availability can be expected to decrease because of consumer and environmental concerns. Since few alternatives are available, future product quality will decrease and consumer costs will increase. For example, a 20% reduction in supply will result in a 100% increase in consumer costs. The use of pesticides is a controversial issue having risk/benefit implications. The risks are well documented; however, benefits are not. This issue requires closer, dispassionate evaluation.

As for pulse crops, in 1987 a dramatic increase in western production of lentils, peas, fababeans and field beans were experienced, resulting in a decrease in producer returns. Future expectations are for a leveling out in production.

This year marks the first time forage crops have been included in the Outlook Conference as a separate topic. In general forages are not given the attention they deserve. They have a value to the Canadian economy of $9 billion: $5 billion as an animal feed and $4 billion for soil erosion control, esthetics and land rehabilitation. The establishment of the Canadian Forage Council this year will help to increase the awareness of the value of forage crops to the Canadian economy.

In general a need was identified to reorient Canadian agriculture to a market-oriented strategy with a strong intelligence-gathering system emphasizing quality and consumer requirements.

At the *Farm Costs and Income* session, in addition to a paper on the outlook for farm inputs, this session featured presentations on the interrelationship between on-farm and off-farm income. Dr. Ray Bollman of Statistics Canada and Pamela Smith of the University of Regina discussed the changing role of off-farm income.

The major conclusions were:

- Off-farm income is gradually becoming more important for farmers and farm families; investment income is a more important source than off-farm wage income; and off-farm income was about 50% of total farm family income in 1986.
- Off-farm income is smaller and less frequent for families on larger farms.
- The combination of higher off-farm income and lower on farm income for families on smaller farms results in total income of farm families being essentially level as farm size increases. Low income levels, as measured by the poverty rate, is highest for younger operators on mid-sized farms.
- Preliminary results from a survey of four Saskatchewan communities indicates that off-farm employment appears to have increased over the last decade; and a higher proportion of farm women, particularly these in the 35-45 age group, are working off the farm.

Dr. Lou Auer of the Economic Council of Canada reviewed developments during the last several decades in the Prairie farm sector. Dr. Auer's presentaton emphasized: the long term decline in real grain prices; the relationship between farm and nonfarm income; the substantial increase in direct government payments during the last several years; and the increasing frequency of part-time farming both for family and marginal farms.

Wayne Jones of Agriculture Canada reviewed the provincial farm income picture for 1987. Market receipts from the livestock sector were very good while those for the crops sector were lower than in recent years. Market receipts were augmented by substantial government support, particularly for the crops sector. The combination of market returns and government support resulted in a relatively good year in terms of provincial incomes. Mr. Jones reported that realized net farm income rose over the previous year in all provinces except Manitoba. However, this was not sufficient to reduce the level of financial difficulty in Canadian agriculture.

Dr. Tom Wise of Agriculture Canada reviewed the outlook for farm input costs. Expenditures for machinery, fertilizer, interest and land rental have fallen significantly in the last year. Fertilizer and machinery expenditures are expected to be weak for the next year, reflecting the poor market returns.

The major theme of the discussion in the Farm Costs and Income session was the increasing role of off-farm income as a portion of the total incomes of farm families. There appears to be an increasing acceptance of off-farm incomes by the farm community. This is reflected by the increasing frequency of both spouses working off the farm at least part-time. It was pointed out during the discussion that this trend is similar to that observed in urban communities – the trend to two-income families. One factor that may inhibit the trend in rural communities is the lack of off-farm employment opportunities for farm operators and their spouses. The discussion on farm input costs included questions on the relative importance of interest as an expense.

The concurrent session on *Food* looked at structural change in the processing, distribution and foodservice from both the Canadian and United States perspectives. In an overview of growth and structural change in the American food manufacturing industries over the past 20 to 25 years, John Connor of Purdue University described an industry experiencing both growth and change.

A noteworthy point was the trend toward fewer plants and fewer food manufacturing companies. This will lead to a higher concentration of ownership, especially in industries where advertising is intense. By the year 2000, it is expected that 90% of industry assets will be owned by 50 firms, compared with 75% in 1987. The increasing concentration is likely to be caused by mergers, which in turn will reflect high profits in the industry relative to total manufacturing.

Turning to the Canadian scene, Don Jarvis of the Grocery Products Manufacturers of Canada (GPMA) also painted a picture of an industry in the midst of change. A major concern of food processors is the Canada-U.S. free trade agreement. How the problems of two-price wheat, national supply management marketing boards and provincial marketing boards are addressed – and how soon – will play a significant role in the future structure of the industry.

Change in the economic climate and in technology are also affecting structure. Changes in consumer lifestyles and concerns about food are leading manufacturers to develop new products that reflect an emphasis on freshness and nutrition, and that are convenient, microwaveable and safe. Ingredients are changing as new technologies develop. The challenge for the industry is to cope with these changes; the firms that adjust to them will be the survivors.

So far as food distribution is concerned, a number of trends were identified by Jacques Auger of the Canadian Council of Grocery Distributors. Mr. Auger sees no reason for competition in the industry to lessen as the rate of market growth levels off and as distributors endeavour to increase market share. The attention of firms is now focused on diversification into other retail sectors, so integration and consolidation in the industry will continue to taper off. Competition from nonfood retailers will continue to preoccupy food distributors. Consumer needs will evolve as a consequence of increased travel, immigration, two-income families and the trend to healthier eating.

Finally, Doug Needham of the Canadian Restaurant and Food Service Association described the rapid growth in Canada's food service market over the last 20 years. Market share has increased from 18% in 1963 to 35% in 1986. The performance of the industry and the performance of the economy are closely related, particularly for full-service licensed restaurants, which do best when the economy is strong. The biggest challenge for the industry is the shortage of workers; employment is forecast to increase by 25% between 1987 and 1995. Indeed the growth in the market is on a collision course with a decline in the number of young workers. Tax reform, in particular the impact on dining establishments of the proposed 80% deductibility for business meals, is also a concern.

When opening the concurrent session on *The Family Farm and the Future of Canadian Agriculture*, Hon. John Wise said that the 1987 Outlook Conference is dealing not only with economic forecasts, but also with social issues, which sparked a lot of discussion and projections regarding the future of the family farm. Mr. Wise defined the family farm as not only a business (99% of farm businesses are family operated) but also as a way of life, and said the family farm is the object of many pressures including economic, social and financial issues. He said Agriculture Canada cannot claim that it has the mandate to change all the policies and programs dealing with the preservation of the family farm. However, the Minister said Agriculture Canada can influence this process by assuming a leadership role and that it will do so.

Discussion also centered on whether the single family farm operation is in danger of extinction or, as one discuss and asked, whether the family farm is becoming a dinosaur. The answer was that it seemed to be becoming a dinosaur, but one that runs and performs as a thoroughbred in a race at the same time it pulls the family cart.

It was pointed out the family farm, farmers and farm owners as a group deal with very high stress. This has to be recognized by the families themselves and also by government and the agri-business community.

In the case of farm women, the most important factor stressed was the lack of recognition of their farm work in a tangible economic, legal, financial and human way. With respect to farm women, it was noted there has been a change in attitude about their contribution to agriculture, from women themselves, from spouses, media and government. But there is still a long way to go. There is a need for more information, education, commitment and understanding of the women's contribution to the agricultural economy. As one woman participant put it, women must start by covering their assets and get more representation on boards and in government. If they are to ease the stress on the farm family, all factors have to be dealt with, including child care, social services, educational services, medical and health care and maternity benefits, she reported.

There was a consensus in this session that the many challenges that face the family farm, including environmental concerns, farm safety, farm labor, farm transfer, role of women and child care can be met through some ongoing discussion beyond this Outlook forum with both individuals and also with farm organizations. The discussants called for consensus building on concrete policy measures geared not only to preserve but also to enhance the way of life in the family farm that would go beyond a simple analysis of statistical charts and tables and would extend the initiative of Mr. Wise to redefine the concept of the family farm to embrace quality of life aspects as well as economic prosperity.

There was general agreement that the consultation process initiated by the Minister has generated a stimulating document that led to this session's discussions and to a need to focus the discussions to move towards action. As Mr. Wise indicated, "The total program still lies ahead."

Prime Minister's Address

*Right Honourable Brian Mulroney**

All of us attending this Outlook Conference are united in some way by agriculture. We share the belief that agriculture is a cornerstone of our economy and of our rural communities.

I want to deliver a message to you about the federal government's commitment to building toward a strong, stable future for Canadian agriculture. This government's commitment to Canadian farmers is one we have delivered on in the past, and it is a commitment I am here to deliver on again today. We recognize, just as you do, that agriculture matters to all Canadians.

We know that agriculture means jobs. It means economic wealth. It means the lifeblood of many regional economies.

At this conference you have heard about many of the difficulties, human and economic, facing Canadian agriculture. Of course, you have heard the many success stories in agriculture today, about stability in sectors such as dairy and poultry, and about growth in sectors such as beef. You have shared at this Conference the knowledge that some sectors of our industry, especially grains and oilseeds, face extremely difficult circumstances.

You know about the devastating effects of the international subsidy war. Farmers can have confidence in this government's determination to continue fighting – at every possible opportunity and in every possible way – for an end to unfair, destructive international subsidy practices.

I met with the farm leadership before the 1986 Economic Summit in Tokyo, where Canada put agriculture on the agenda. At General Agreement on Tariffs and Trade talks, Canada worked hard to get agriculture on the agenda of the Uruguay Round of multilateral trade negotiations. The Cairns group of leading non-U.S. and European producers met in Ottawa last spring.

Prior to the Venice Summit Meeting, I consulted again with the farm leadership to seek your views on the position Canada should put forward at the Summit. At this meeting, the Summit partners agreed to phase out agricultural subsidies by the year 2000. This represents slow but steady progress in the right direction. And Canada has played a constructive role in moving in that direction.

Canada has helped achieve agreement in the OECD, as at the Economic Summit, on the principles for international reform in agricultural trade and subsidy practices. In addition, Canada, along with some other countries, has tabled key negotiating proposals at the GATT.

I can assure you that Canada will continue to play a lead role until international reform is achieved. In the meantime, farmers can have confidence in our priority commitments to building a stronger, more competitive agriculture industry in this country. The path we are on is clear.

First of all, to deal with the immediate problems, we know we must:

- continue to push for concerted international reform in agriculture;
- pending a lasting international solution, continue to cushion farmers from the hurt caused by international subsidy practices; and
- continue to maintain our agricultural markets and to aggressively pursue new ones.

As an example, we have increased our share of international wheat sales from 17% only two years ago to a forecast of 24% in the current 1986-87 crop year, according to an estimate of the International Wheat Council.

In the face of the European-U.S. trade wars, we have not only maintained but also increased by 27% Canadian exports in grains, oilseeds and their products.

In the meantime, we must:

- continue to address farm debt problems; and
- continue to offer compassionate assistance in cases where farmers have decided to leave the sector.

You have seen us deliver in all of these areas. Since the present government took office, direct assistance to agriculture has increased by almost 400% and now stands at over $4 billion a year.

But let us also consider the longer term. To build toward a strong, stable future, we must:

- strengthen our safety net programs;

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* Prime Minister of Canada.

- further diversify western agriculture; and
- ensure that our soil management programs serve the farmers of tomorrow.

With those objectives in mind, I am announcing today a series of federal initiatives that represent an unprecedented level of support for Canadian farmers. It is an exceptional package of initiatives for exceptional times.

First, among the initiatives to address immediate and pressing problems, the farm fuel tax rebates, which we introduced two years ago and which would have expired at the end of this month, are to be extended for two years to the end of 1989. This represents an estimated total saving to farmers of about $400 million.

We are also extending to 1991 other key programs this government introduced – programs that are working. Among them are the Farm Debt Review Boards, which have helped more than one thousand farmers to remain in business. The extension of these boards to 1991 represents a further federal commitment of about $40 million.

The federal government has already committed $30 million to the Farm Credit Corporation so that their clients can benefit from the review board process. I am announcing today additional special funding of $30 million this fiscal year and $100 million in each of the next three years. This will enable the corporation to enter into arrangements reached through the review process on an equal basis with other creditors. Farmers have told us how concerned they are about the FCC's financial situation.

These are the steps we are taking. First, the federal government will defer a loan payment of $103 million due from the FCC in January; this will ensure the FCC has the funding needed to complete its lending program for the current fiscal year. Second, in recognition of the FCC's deteriorating financial position, the government is making a provision of $100 million for corporate losses. Third, arrangements for providing additional assistance to ensure the FCC's long-term viability will be based on a new business plan now being developed for the corporation. By taking these steps, we are ensuring that the FCC will be there for the farmers of tomorrow.

Finally, extension of the Canadian Rural Transition Program to 1991 represents an additional federal commitment of $28 million. In addition, potato producers will receive in the very near future a stabilization payment of $17.1 million on their 1985 crop.

I am also announcing today a series of initiatives that will build toward a strong future for Canadian agriculture.

In the stabilization area, we are taking steps to strengthen the Western Grain Stabilization Program. We will undertake measures to encourage as many qualifying farmers as possible to join. To this end, we will be proposing amendments to remove the 10% penalty for those producers who now want to join the program. These measures will benefit farmers in the amount of nearly $100 million.

In addition, the federal government will write down about half of WGSA's deficit this year in the amount of $750 million. These measures are the first part of an overall review of farm safety net programs. This review, to be undertaken with the provinces and producers, should strengthen the programs for farmers, and lead to new cost-sharing arrangements.

Now let us talk specifically about grain farmers. This government knows the grains sector is facing an exceptional and very pressing cash flow problem. In 1987, grain farmers' receipts were maintained at almost the same level as in previous years. In other words, while market returns fell dramatically, federal government support rose dramatically.

Next year, we expect that grain farmers' receipts will again be maintained at about the same level, largely because of federal programs, which should pay grain farmers a record $2.9 billion.

I am pleased to announce that the Government of Canada will provide a further $1.1 billion in direct payments, three quarters of it by March 31. For a typical farmer producing canola, barley and wheat on 700 acres in the Camrose area of Alberta, it means another $8500. For a farmer in Kent County, Ontario, who is producing corn, soybeans and wheat on 300 acres, it means another $7250. For a farmer in Swift Current, Saskatchewan, with 600 acres of wheat and 300 summerfallow acres, it means another $8100.

The assistance provided to grain farmers by the Government of Canada, both this year and last year, is unprecedented. And it is necessary.

Finally, I am announcing today the federal government's intention to pursue with the provinces, and in some cases the private sector, a series of long-term joint agricultural initiatives.

Approval of these initiatives is dependent on negotiating arrangements with the provinces. However, I can tell you that the federal government is prepared to commit more than $100 million to these ventures.

One example the federal government wants to explore is alcohol-blended gasolines, which would create a new domestic market for grain. Other examples include additional initiatives throughout Canada in soil conservation, and a research center based in the West, geared to the diversification and competitive needs of agriculture.

Finally, I want to say a word about Canadian agriculture and the free trade agreement. I believe the interests and concerns of our farmers have been well protected in the agreement, and I believe we have secured important guarantees and gains:

- The agreement removes the restrictions on exports of beef – a major priority for western Canada.
- The agreement will also be good for our exports of hogs, for, as Bill Vaags, President of the Canadian Pork Council, has pointed out, hogs are a commodity "hard hit by the American protectionist mood."
- It assures that fish in Atlantic Canada may be processed before export.
- And it maintains intact our system of supply management – our marketing boards.

This is especially important in Quebec, where 60% of our agricultural output comes under dairy and egg marketing boards. It meets the requirements of Article XI of the GATT, which enables us to maintain our supply management system. I hope this will go a long way toward satisfying the reservations expressed by the UPA, and I know it is an important concern of Premier Bourassa and the Government of Quebec.

Today, this government is continuing its commitment to agriculture. Farmers can count on us. Your cares are our concerns. Your cause is ours. We are with you for the long haul.

CONCURRENT SESSIONS

LIVESTOCK AND POULTRY

Structural Change in the Livestock Sector

*J. Dyer**

This article discusses structural changes that have taken place in the livestock sector involving cattle, hogs and sheep. It focuses on changes in the number of farms and the number of animals, on changes in farm size, changes in concentration of production and on the level of specialization for each commodity. It presents data from the 1986 census of agriculture and compares them with those from the two previous census years, 1976 and 1981. As well it takes a brief look at some for the possible underlying reasons for change by looking at cost structure, financial structure and policies.

HOG SECTOR

The number of pigs in 1986 was close to 10 million. The number of farms reporting pigs was around 36 000. Compared with 1976 figures, this means that twice as many pigs are reported on half as many farms. There has been a significant increase in inventories since 1976 but not much change since 1981, except that the number of farms has dropped significantly, making the average size farm close to 270 pigs. As well, most of the hog production occurs in the East.

The number of farms with pigs has declined significantly since 1976; eastern and western Canada have close to the same number of farms. In 1976 western Canada had more farms than eastern Canada but that reversed in 1981. Concentration in the industry is concerned with the size and distribution of production. That is, is most of the production controlled by a few large farms, many large farms, many small farms or many medium-sized farms? This is illustrated in some concentration curves in which the farms and the number of pigs on those farms are divided up by different herd sizes. Then for each herd size the percentage of farms and the percentage of pigs held on those farms is calculated. The cumulative percentage of pigs and farms are plotted against each other, with pigs on the verticle axis and farms on the horizontal axis, such that, if all farms had the same number of pigs, the curve would be a diagonal line. If there was a monopoly – that is, if all the pigs were produced on one farm – the curve would fall on the axis. So as the industry becomes more concentrated – that is, as it moves to fewer and bigger farms – the curves shift down and to the right, away from the diagonal and toward the far axis.

Figure 1 shows the calculation for the hog industry. The diagonal line is left in as a reference point; remember the further away the curves are from this line the more concentrated the industry is. Therefore, the curves show a fairly concentrated industry. But a closer look reveals that in 1986 the curve has shifted back slightly, indicating a decrease in concentration. Further investigation reveals that this was because of shifts in concentration in Quebec, whereas the situation in the other provinces was unchanged.

This decrease in concentration happened for a couple of reasons. For example, from 1981 to 1986, stabilization was introduced in Quebec. Before that Quebec had some very large corporate farms. Limits on the farm size eligible for stabilization payments meant these farms had to reorganize to receive payments. The large farms did disband or reorganize into smaller units and so much more of the production now is in the hands of smaller independent producers.

Farm type is one way to determine specialization. A farm is typed by commodity if more than 50% of its sales come from a particular commodity. For example, if a farm has greater than 50% of its sales coming from the sale of hogs, it is said to be a hog farm. Table 1 shows that hog production occurs largely on specialized hog farms and that the percentage of production on specialized farms has increased since 1976.

In order to look at organization within the sector, farms are classified into four groups. Those farms with fewer than 20 pigs are separated out, and the remainder are divided according to three enterprise types: farrowing, finishing, and farrow to finish. This shows whether the sector is getting more or less integrated, not with respect to other commodities or businesses such as feed mills or slaughter facilities, as in vertical integration, but rather within the sector. In hogs, farrow-to-finish operations are integrated and, in cattle, those with cow-calf plus feeding operations are integrated.

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* Agriculture Canada.

The hog sector is becoming more integrated as the proportion of pigs produced on farrow-to-finish operations is the greatest and is increasing. Farrowing operations have decreased slightly and finishing opeations have decreased. The cost structure of these farms is important because it may provide a reason to increase in size. Cost per unit of output in dollars worth of sales was calculated and shows that economies of size are captured fairly quickly and that there is not much change after that point. For farrow to finish, this is the sales class of $50 000 to $100 000, which is fairly low – costs for other operations showed the same thing – so there is not much incentive to increase size in order to reduce cost.

One measure of financial stress or the financial structure of the farm is the asset/debt ratio. This ratio indicates solvency; that is, what would be left if the farm was sold and all debts were retired. It is important because it affects the borrowing ability of the owner and, therefore, the farms' resiliency and ability to weather short-term changes in economic conditions. For example, if the ratio were 1, the sale of the farm would only just pay off debts and there would be nothing left for the owner. In other words, the owner has no equity in the farm. Asset/debt ratios were calculated for the hog sector using estimates of debt calculated from interest paid. These ratios were done for each of six sales class and it shows that all but the largest farms – that is, farms having sales of greater than $500 000 – had high enough ratios to be considered not in financial stress. The $500 000-and-over sales class, however, has ratios close to 1, which could affect borrowing ability.

SHEEP SECTOR

There were approximately 11 000 farms reporting just over 700 000 sheep in 1986, for an average farm size of 64 sheep. Farms and inventories increased in 1981 and then declined in 1986, leaving about the same number of farms as in 1976 with larger inventories of sheep, for an average increase of 14% in farm size. Concentration decreased slightly from 1976 to 1981, but there has been no change since 1981.

CATTLE SECTOR

The cattle sector has two distinct subsectors: cow-calf, represented by beef cows, and feeding, represented by steers. The changes in each are considered separately.

The cow-calf subsector has had nearly proportional declines in both farm numbers and inventories. There were close to 100 000 farms reporting about 3.2 million beef cows in 1986. The average farm size is about 32 beef cows, which is virtually unchanged since 1981 and is up only slightly since 1976. Even though farm and inventory numbers have decline since 1976, the proportion of cows in the East, compared with that in the West, has not changed. Nearly two thirds of the beef cow herd is located in western Canada.

The concentration curves represented in Figure 2 show that this sector is not very concentrated, compared with the situation for hogs, for example. The concentration has not changed at all since 1976; some studies show no change in 20 years.

This is further supported by the distribution of cows (Figure 3). Although, inventories have declined, most of the cows are still in herds of between 20 and 50, which corresponds with the average size.

Economies of size as in hogs are captured quickly, at about $25 to $50 worth of sales, and there is not much change after that point.

The feeding subsector is located largely in western Canada. Alberta (42%) is the largest feeding province, with Ontario (31%) second. There is not much change in the share of feeding over the last 10 years except for small changes in Quebec and a small decrease in Alberta.

The number of farms reporting steers has decreased since 1976 and the number of steers on those farms has also decreased to about 1.4 million head, making the average size about 23 steers, which is unchanged since 1981 and up slightly since 1976. Since farm numbers and inventories have declined by about the same proportions, it may be concluded that the inventory declines are due to the exit of farms from the industry. One thing that is different from the 1976 situation, however, is the increase in farms with large herds. In 1976 most of the steers were in herds of between 20 to 50. Since 1981, there are two peaks in the distribution; many are still in herds of 20 to 50, but most are now in herds greater than 500 steers.

This distribution indicates concentration has increased from 1976 to 1981 (Figure 4). More of the production is now in the hands of those who have large herds, and there are more farms in this category as well. It should be emphasized, however, that these changes took place from 1976 to 1981, and nothing has changed since then.

Economies of size show the same thing as in the cow-calf sector. They are captured early and do not change much.

The cattle sector as a whole, as in the hog sector, is quite specialized, since a large percentage of production is on specialized beef cattle farms (Table 2). Comparisons with situations in earlier years were not possible here because published data do not separate dairy animals from total cattle by farm type. About 20% of cattle, however, are on grain farms.

The cattle sector, unlike the hog sector, is moving away from integrated operations and toward specialization in either feeding or cow-calf. Whereas in 1976 the percentage of cattle on cow-calf plus feeding operations was largest, now cow-calf operations dominate and feeding operations have increased since 1976. The important point to note is the trend to less integrated operations.

For the cattle sector as a whole, asset/debt ratios declined as size increased, as they did in the hog sector, but no group had a ratio of less than 2:1; therefore, on average, the beef cattle industry is not as highly leveraged as the hog sector and so is not as vulnerable to financial stress.

In looking at some other structural attributes such as legal organization, including the percentage of nonfamily and family corporations and also the percentage of off-farm work, there does not appear to be any real changes in either of these since 1976.

CONCLUSION

In the hog sector, some large changes have occurred. Farm numbers have declined since 1976 and now twice as many hogs are produced on half as many farms. Farms have become much bigger but this is not because of economies of size.

Concentration in Quebec has decreased as a result of stabilization policy.

Farms are moving toward more commodity specialization and are becoming more integrated from farrowing to finishing. Farrow to finish or integrated operations now produce the largest proportion of pigs in Canada.

In the cattle sector, it is apparent that most of the changes occurred in the period from 1976 to 1981. Farm numbers and inventories declined but the average cow herd is still the same as in 1981 and is little changed since 1976. The distribution and concentration of production in the beef cow herd has not changed.

The average size of the steer herd, like the cow herd, has not changed since 1981, although the distribution of production now favors large farms and concentration has increased since 1976. There appears to be a bimodal distribution of production, with a group of feeders with small herds – possibly backgrounders – and a group of feeders with large herds – possibly feedlots. The cattle sector as a whole is fairly highly specialized both in terms of commodity produced and enterprise, in that the percentage of integrated (cow-calf plus feeding) operations is declining.

In both the hog and cattle sectors, indicators show solvency ratios decline as farm size increases, but only the very large hog operations appear to be vulnerable and possibly less resilient to changing economic conditions.

In terms of overall structure, it appears that the unit of the family farm remains dominant in the livestock sector as the percentage of nonfamily corporations has not changed nor has the proportion of off-farm work.

An important change in the cattle sector not apparent from this analysis is that, even as inventories of beef cows have declined, beef production has remained relatively high. Advances in reproductive efficiency and rate of gain through better breeding and management have resulted in gradual improvement in the ability of the sector to produce beef.

Production efficiency has increased in the hog sector as well for similar reasons. This has allowed both sectors to produce meat in excess of domestic requirements, which will continue as gains are made in the efficiency of a dynamic industry.

TABLE 1 DISTRIBUTION OF HOG PRODUCTION

	Specialized farms			
	Dairy	Cattle	Hog	Grain
		(%)		
1986	3	3	81	3
1981	4	6	72	5
1976	4	6	66	7

TABLE 2 DISTRIBUTION OF BEEF CATTLE PRODUCTION

	Specialized farms			
	Dairy	Cattle	Hog	Grain
		(%)		
1986	3	73	2	18

FIGURE 1 OWNERSHIP CONCENTRATION IN THE HOG SECTOR

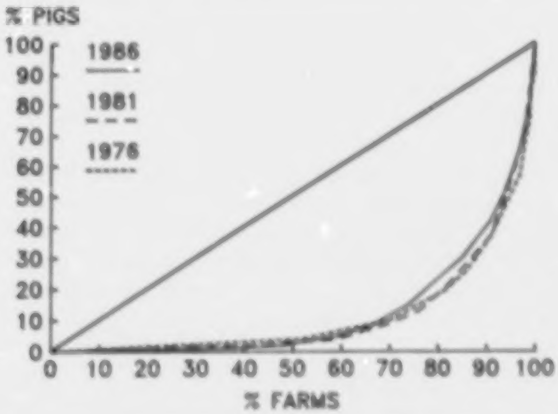


FIGURE 2 OWNERSHIP CONCENTRATION IN THE BEEF SECTOR

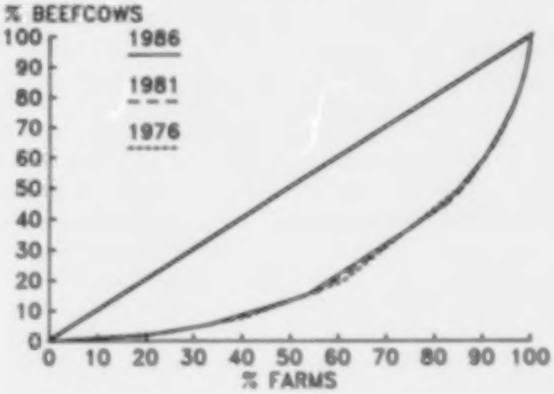


FIGURE 3 DISTRIBUTION OF BEEF FARMS BY HERD SIZE

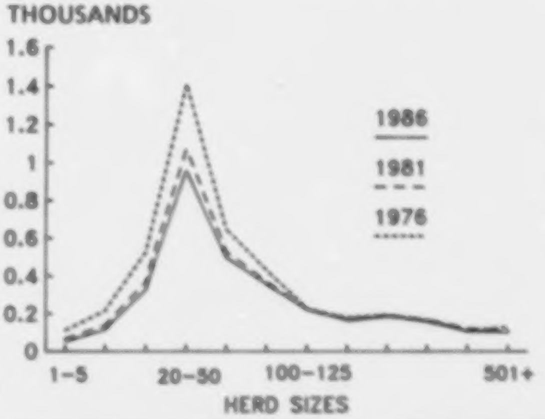
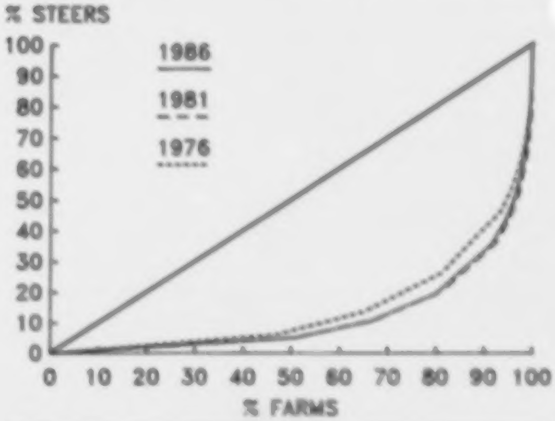


FIGURE 4 OWNERSHIP CONCENTRATION OF THE STEER HERD



The Changing Production Structure of the Poultry Industry in Canada

Don Murray[*]

In this article, the structure of the poultry production system is examined over five agriculture censuses, 1966 to 1986, to give five snapshot observations over 20 years. No effort is made to identify and associate economic stimuli that may have contributed to changes in structure because most of the provincial supply management boards were in place by 1971, with a smaller number in place in 1966 as well. The ramifications of regulation under provincial marketing legislation are that each provincial government can control its supply infrastructure through quota transfer policy, quota consolidation policy, and allocation of growth quota policy.

This in effect allows provincial governments through provincial marketing board administration to determine:

- the maximum desirable size of commercial production unit, more specifically to define "the family farm" in accord with each provincial government's agricultural policy objectives;
- to control regional production of these commodities within a province in accordance with the objectives of the province's agricultural and social policy; and
- with respect to poultry meat production, to influence producer returns through minimum prices and provincial quota share in the context of national agency quota allocations.

Thus, rates of consolidation, changes in concentration and probably to some extent changes in specialization are influenced or governed by political objectives and not by economic factors. These changes are observed as a matter of academic interest and represent a useful bench reference against the same trends in the production base for other agricultural commodities. The provincial differences in these trends are not examined here and, given the preceding comments, would be tantamount to an examination or comparison of provincial agricultural policies.

Firstly, let us examine the changes in the turkey production structure. In order to convey trends in a simplistic way, a division of 20 000 head was used for all of the analysis. Smaller poultry units were included because of their aggregate importance to allied industries.

TURKEY SECTOR

The number of farms reporting flocks of between 1 and 20 000 turkeys has been decreasing over the past 20 years, particularly between 1966 and 1971 and again between 1981 and 1986 (Figure 1). The number of farms with fewer than 20 000 turkeys decreased from 21 000 to 13 000 between 1966 and 1971, increased slightly to 14 000 by 1981 and subsequently dropped to 9 500 by 1986. The percentage of total turkeys present on farms reporting fewer than 20 000 turkeys went down from 56% in 1966 to 30% in 1976 and back to 47% in 1986. Please note that populations reflect only June 1 observations and are not marketings or quota. To better clarify the definition of a farm for the purpose of this analysis, it is any agricultural operation with sales of $2500 or more.

The number of farms reporting more than 20 000 turkeys went up from 115 in 1966 to 137 in 1971 but, following the introduction of supply management, the number of these larger farms went down progressively to only 97 farms in 1986 (Figure 2). The percentage of farms having 20 000 turkeys and over did not change significantly, as it varied between 0.5% and 1.2% of total farms. The percentage of total turkeys on these larger farms peaked in 1976 with 50% of the turkeys and subsequently decreased to 39% in 1986. Since 1981, both the total number of farms and the number of larger farms decreased.

EGG SECTOR

Among farms reporting fewer than 20 000 layers, the trend is similar for four variables; they decreased over the past 20 years (Figure 3). The number of farms reporting fewer than 20 000 layers went down from 143 000 farms in

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[*] Agriculture Canada.

1966 to 39 000 in 1986. The percentage of the total number of layers in that size of operation decreased significantly, going down from 88% of the total in 1966 to 64% in 1986. This is an indication that concentration has continued to occur even after the introduction of national supply management in 1972.

The change toward greater concentration is more evident among farms reporting 20 000 layers and over (Figure 4). First, the number of farms reporting 20 000 layers and over increased from 82 in 1966 to 218 in 1986. However, a small decline was noted in the last five years. The most definite trend, however, is the percentage of total layers on these large farms; it increased from 12% in 1966 to 30% in 1986, further demonstrating a trend to consolidation of operations. Total layer numbers have gone from 23.1 million in 1966, up to 27.3 million in 1971 and back down to 23.9 million in 1986.

TOTAL POULTRY SECTOR

In general farms reporting fewer than 20 000 birds have diminished over the past 20 years (Figure 5). Even though the percentage of total farms decreased by only 25% between 1966 and 1986, the percentage of total birds on these farms dropped from 66% in 1966 to 15% in 1986.

The number of farms reporting 20 000 birds and over more than doubled over the past 20 years, totaling 1 546 in 1986 (Figure 6). The percentage of the total number of birds by those larger farms increased from 34% to 70%.

FARM CHARACTERISTICS

The percentage of young farmers under 35 stayed the same between 1966 and 1971 at 13%, then increased to 19% in 1981 and dropped to only 7% in 1986 (Figure 7). This seems to support the conclusion that this industry has become a mature one, implying fewer quota sales, at least to younger operators, over the past five years.

Among commercial producers, those with flocks between 5 000 and 10 000 birds seem to be in the most stable financial situation, as measured by net capital ratio (Figure 8). But with increases in flock size, the ratio seems to convey significantly higher debt loads than smaller operations. For example, flocks of 200 000 birds and more have a ratio of 2.92. This begs the question of whether quota value was incorporate in value of assets reported. These relatively high ratios suggests that either some quota value has been reflected through land and buildings or, more likely, that the industry is mature and that little quota has changed ownership over time. To put these in proper perspective, these ratios should be compared with those in other specialized agricultural enterprises such as hogs.

Unlike the situation for hog and cattle production, specialization in poultry production seems to have reached a peak in 1981 and to have declined since (Table 1). In 1986, some 79% of poultry production was on farms producing poultry exclusively.

In conclusion:

- The poultry sector is characterized by an extensive production sector in which small unregulated producers have diminished in importance at a rapid rate before national supply management but at a slower rate since.
- Regulated egg production is becoming more concentrated with fewer large producers. For turkeys, there are more larger producers with less concentration. The situation for chicken, as conveyed by "total poultry," probably suggests more concentration, as for eggs.
- The average debt load is extremely low relative to credit available.
- Little quota trading has occurred and the same farmers are becoming older.

TABLE 1 DISTRIBUTION OF POULTRY PRODUCTION

	Specialized farms				
	Dairy	Cattle	Hog	Grain	Poultry
			(%)		
1976	2	2	3	4	82
1981	2	2	2	3	85
1986	2	3	4	4	79

FIGURE 1 FARMS REPORTING FEWER THAN 20 000 TURKEYS

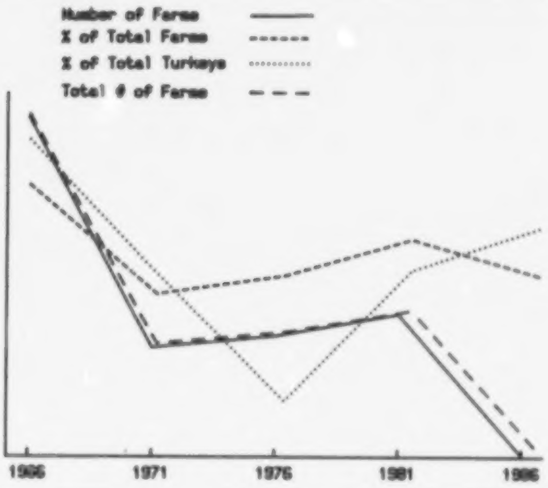


FIGURE 2 FARMS REPORTING 20 000 TURKEYS AND OVER

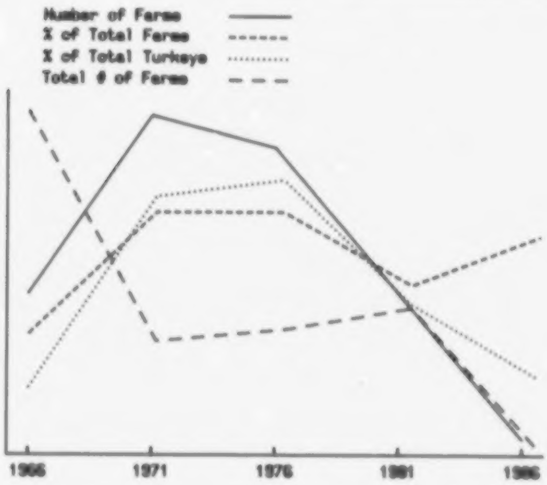


FIGURE 3 FARMS REPORTING FEWER THAN 20 000 LAYERS

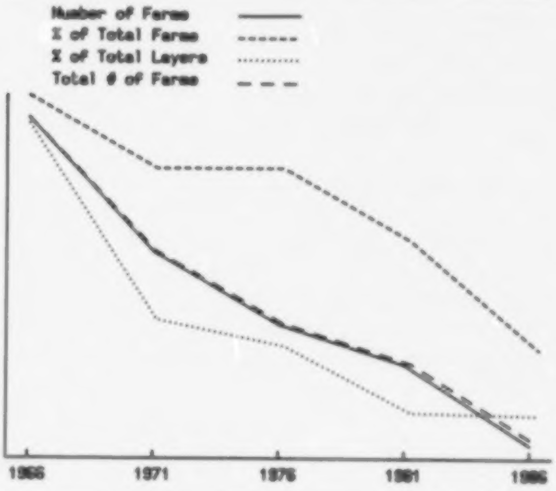


FIGURE 4 FARMS REPORTING 20 000 LAYERS AND OVER

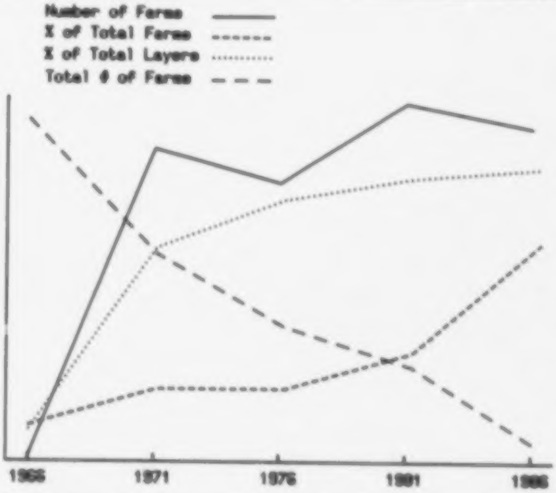


FIGURE 5 FARMS REPORTING FEWER THAN 20 000 BIRDS

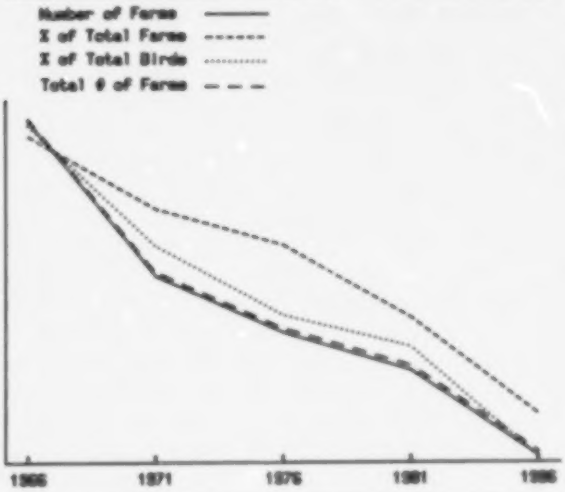


FIGURE 6 FARMS REPORTING 20 000 BIRDS AND OVER

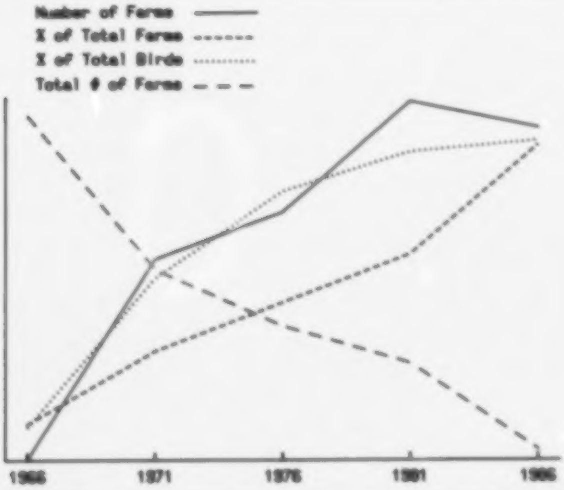


FIGURE 7 NUMBER OF FARMERS REPORTING TOTAL POULTRY, BY AGE

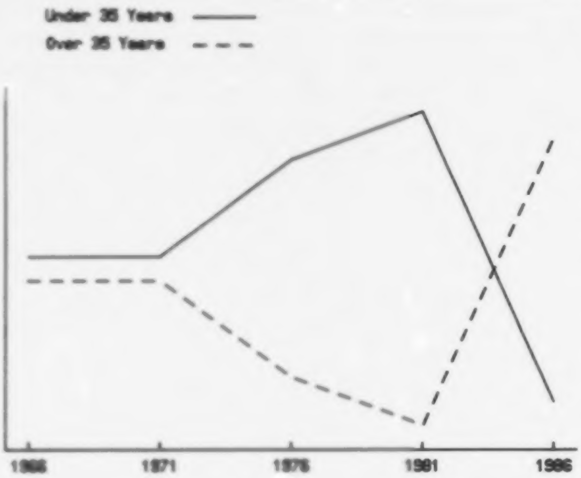
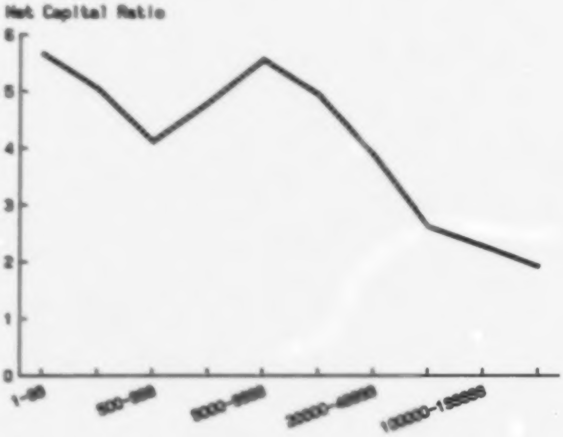


FIGURE 8 FINANCIAL STRESS OF POULTRY FARMS, BY SALES CLASS, 1986



Structural Change in the Canadian Poultry Industry

*H. Garth Coffin**

INTRODUCTION

In the preceding article, Don Murray has presented a broad overview of structural change in poultry and egg production according to the latest census data. There are many aspects of this subject one could explore. I will deal with only a few. Specifically, in addition to commenting on Don Murray's observations, I wish to raise a question about the quality of the census data for this kind of analysis. I think we have a problem here. I also want to suggest that we should be considering structure and structural change throughout the entire system, from producer to consumer, rather than the production sector in isolation.

Before turning to the specific evidence of the number and size of firms in poultry production, it is worth reviewing why we are interested in structural change in the first place. One of the reasons for our interest is what the changes in the number and size of firms might tell us about evolution toward the most efficient scale of operation. Another reason is what they tell us about the competitive environment, which will influence the conduct and performance of the industry, including the manner in which the benefits of efficiency gains will be distributed to other participants and consumers.

The poultry industry provides an interesting case to study because of concerns about the effects of supply management. On the one hand, it may be argued that supply management not only reduces the incentive for producers to expand to more efficient scale, but also imposes a barrier to such change through production quotas, which are not freely available. On the other hand, it may be that supply management facilitates that evolution by providing a more secure environment for investment and greater credit availability. Moreover, since the most efficient producers are the ones best able to afford quota purchase, quota should flow from the less efficient to the more efficient producer, thereby raising the average efficiency of the production sector. More work is needed on this question.

PRODUCTION SECTOR

One of the difficulties in evaluating structural change in terms of movement toward more efficient production is that we have only a vague idea of what constitutes the most efficient size of operation. Rogers (1979) defined a commercial, one-man operation as one having: 20 000 to 25 000 laying hens, 135 000 to 250 000 chickens per year (30 000 to 50 000 per cycle), and 10 000 to 30 000 turkeys per year in several batches.

On this basis, Murray's choice of 20 000 birds per batch as a line of demarcation for the census data is a reasonable one for egg and broiler production, but it may be a bit high for turkey production.

In general, we see a declining trend in smaller farms and varying rates of growth in the number and market share of larger farms. Unfortunately, this level of aggregation disguises some changes occurring in some specific size categories. For example, in chicken broiler production, the census data for the largest size category of more than 100 000 birds per cycle indicate a decline from 59 to 28 farms since 1976 and a decrease in the average size of flock from 162 147 to 134 255 birds per cycle over the past 10 years. Even with shorter and more frequent production cycles, this would still imply a reduction in total output from these farms and in their share of total production.

A similar pattern may be observed in the number of larger-sized turkey farms, though not necessarily in the average production per farm. In fact, in this case, the only commercial size category to exhibit growth and market share is that of 5 000 to 10 000 birds per batch, which have expanded from 128 farms in 1976 to 160 farms in 1986.

The structure of egg production appears to be the most stable of the three, with some growth occurring in the number and market share of flocks of 20 000 to 50 000 birds. The largest change in all areas of poultry production is the sharp drop in the number of farms with fewer than 5 000 birds, most of which could not be considered commercial operations in the first place.

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What is behind these changes or lack of structural change, as the case may be? Does the structure tend to be frozen by the quota system, or to be shaped primarily by provincial government policy, as suggested by Murray? Or is there still some room for economic forces to operate?

There is no doubt that economic forces are somewhat constrained by supply management. It is especially apparent that the regional distribution of production is strongly influenced by this system. But there may still be room for economic forces to influence structural change within the production sector. The least efficient producers may not be forced out quite as quickly as they would be in the absence of supply management. But if they are much below the average performance of the industry, they will not survive, even with supply management.

Efficiency may be less dependent on economies of size than is often assumed. As observed by Menzies (1983, 39) with respect to farm cost surveys for egg production in Canada: "Efficient and inefficient producers were found at all levels and no evidence was found of economies of scale within the 10 000 to 50 000 layer range. Extensive studies in South Africa, another supply management country, showed similar results."

If one analyzes the costs of production for poultry and eggs, it may be seen that a substantial portion of total costs is made up of feed, chick and other variable costs unrelated to scale of operation. This means that overhead costs that give rise to economies of size may account for only one quarter of total costs. The critical size, therefore, is that which can be effectively operated by one man or multiples thereof. A significant part of the industry is moving into that category. Although it may be that the number of the largest-sized farms is influenced by provincial quota policy, it is also possible that some of these operations have experienced diseconomies of size associated with limitations of management.

LIMITATIONS OF CENSUS DATA

Census data do not tell us anything about the reason for change. In fact, it may be that census data are not even very good indicators of how much change is actually taking place. On the basis of preliminary comparison with data on chicken quota holders in a few provinces, it seems that structural change may be greater than that suggested by the census.

Examples of the differences are shown in Figures 1 and 2, which compare the distribution of quota holders with census data for Ontario and British Columbia. In both cases, the census seems to be overstate the number of farms in the smallest categories and underestimate those in the larger size groupings. Additional comparisons, including those for Nova Scotia and Manitoba are shown in Table 1.

This shows more clearly the wide discrepancies in some of the numbers. The distribution appears to be particularly skewed in Manitoba where the number of flocks of more than 500 birds is 82% larger than the number of quota holders. In Ontario and B.C., the number of quota holders exceeds the census count of flocks larger than 500 birds.

Part of the reason for differences could be that some farms were between cycles when the census was carried out. Another source of difference could be in the conversion of quota units to live bird equivalents. But if those were the only factors, the differences would be fairly consistent. The only consistency evident thus far is an apparent downward bias toward smaller farms in the census data on size distribution. Quota holder data may be a better source for serious studies of structural change in the production of supply-managed commodities.

PROCESSING AND MARKETING

If we are to be logical and consistent in terms of implications for consumer welfare, we should be examining structural change in the rest of the food system as well as in the production sector. It would not be accurate to infer that efficiency gains in production automatically result in greater consumer welfare unless there is sufficient competition to ensure that such gains are passed on. We need also to look, therefore, at efficiency and competition in processing and marketing. Imbalances in market power have been contributing factors to the existence of marketing boards in the first place. We should be concerned about what is happening downstream from the farm gate.

In general, it is understood that the concentration of market power is much higher in the processing and retail sectors than at the farm level. On the national level, fewer than 10 major supermarket chains account for more than half of total retail food sales. That represents enormous buying power. The four largest poultry processors represent nearly 40% of total volume of processed product. On a regional basis, the concentrations are much higher.

Supply management has changed the distribution of market power. Retailers are still in the drivers seat in deciding the terms under which product will be made available to consumers. But supply management gives producers a large measure of bargaining power with which to deal with processors. While that power is constrained by regulations and by supervisory bodies, it does apply certain pressures to the processing sectors. One might expect this pressure to contribute to structural change. Such does not appear to be the case.

Table 2 provides selected data on the poultry processing sectors in Canada and the U.S. from a study by Lanoie (1985). In brief, since 1972, the number of plants has decreased and the average size of plant has increased much more slowly in Canada than in the U.S. The average poultry processing plant in the U.S. is now more than twice as large as the average for Canada. If there are economies of size in processing – and they are likely to be more important at that level than in production – this has some implications for the cost of poultry products to consumers in Canada.

As noted earlier, structure affects the conduct and performance of an industry. Gross margins can be treated as an indicator of performance.

Despite the relatively slow rate of adjustment in the poultry processing sector, inflation-adjusted gross margins of Ontario processors have averaged 10 cents per kilogram less since 1979 than in the seven years preceding national supply management for chickens (Figure 3). This may be a reflection of the pressure referred to above.

Unfortunately, there is not the same degree of pressure on retailers. Taking the Toronto market as an example, retail margins on fresh chicken have increased by nearly 50% during the past three years. In real terms, after adjusting for inflation, that retail margin was nearly 60% higher in 1986 than in 1980.

Using average producer, wholesale and retail prices for chicken in Toronto in 1986, the shares of the consumer dollar spent on fresh chicken are shown in Table 3.

These calculations speak for themselves in terms of efficiency and market power at various levels in the food system. Clearly the retail sector is a major factor in this picture.

SUMMARY

The main observations I would like to leave with you may be summarized as follows:

- Structural change in terms of the number of size of farms is occurring at a moderate pace in the poultry and egg production sector. Generally, these changes appear to be in the direction favored by economic forces, namely toward fewer and larger enterprises. There is very little change in the regional location of production.
- Despite the constraints represented by supply management, there is evidence of growth and renewal. The percentage of producers under 35 years of age has held steady or has increased in most of the critical size categories. New producers have not been shut out.
- Discrepancies between quota holders and census data raise questions about the reliability of the latter for studies of structural change. There appears to be a downward bias in the average size of commercial operations.
- Given the importance of the role of processing and marketing in efficiency and consumer welfare, studies of structural change should include what is happening at all levels beyond the farm gate.

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TABLE 1 COMPARISON OF QUOTA HOLDER AND CENSUS DATA FOR CHICKEN PRODUCERS IN SELECTED PROVINCES, 1986

	Size Range (Birds/Cycle)			
	500-9 999	10 000-49 999	50 000	Total
	(Number of farms)			
Nova Scotia				
Quota holders[a]	–	55	6	61
Census	13	46	7	66
Ontario				
Quota holders[b]	25	620	99	744
Census	160	432	97	689
Manitoba				
Quota holders[a]	37	77	13	127
Census	160	64	7	231
British Columbia				
Quota holders[c]	10	180	41	231
Census	41	121	31	193

[a] Quota converted to birds per cycle equivalent from kilograms of eviscerated chicken.

[b] Quota expressed in units of 0.75 sq. ft.

[c] Quota converted to birds per cycle equivalent from original expression in kilograms of live weight.

TABLE 2 POULTRY PROCESSING SECTOR IN CANADA AND THE U.S.

	Canada	U.S.	Ratio U.S./Canada
Situation in 1982			
Number of establishments	96	534	5.6:1
Value of manufactured shipments (constant 1972 $)			
Total (million)	517.5	6.773	13.1:1
Per plant	5.391	12.683	2.4:1
Concentration ratio of 4 largest firms (1977) (%of total shipments)	39.2	13.9-16.6	0.4:1
Change since 1972 (%)			
No. of establishments	–2.0	–18.0	9:1
Volume of shipments			
Total	44.4	76.3	1.7:1
Per plant	47.4	115.2	2.4:1

Source: Lanoie (1985).

TABLE 3 CHICKEN PRICES, 1986

	Price	Total return	Share of consumer dollar
	(cents/kg)	($/bird)	(%)
Input supplies	Feed and Chick	1.32	24.1
Producer 2 kg Live	109.4	2.19	
Gross margin (after feed and chick)		0.87	15.9
Processor 1.47 kg evisc.	218.6	3.21	
Gross margin (over producer price)		1.02	18.6
Retailer 1.45 kg	377.5	5.47	
Gross margin (over wholesale price)		2.26	41.3

FIGURE 1 COMPARISON OF DATA TAKEN FROM CHICKEN QUOTA AND CENSUS, ONTARIO, 1986

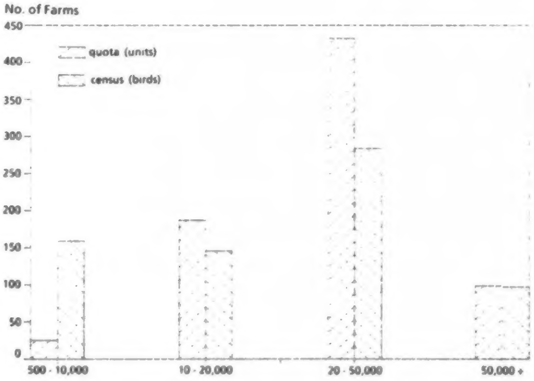


FIGURE 2 COMPARISON OF DATA TAKEN FROM CHICKEN QUOTA AND CENSUS, BRITISH COLUMBIA, 1986

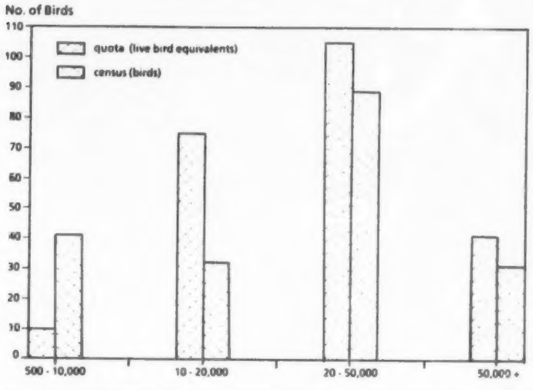
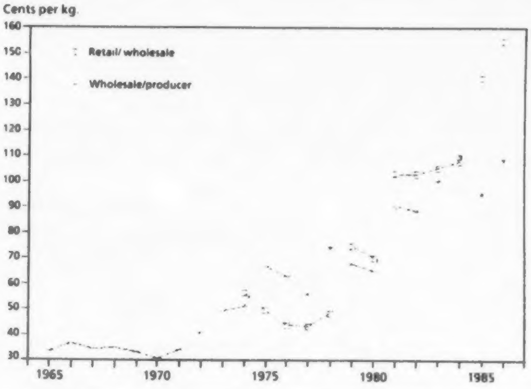


FIGURE 3 CHICKEN PRICE MARGINS, TORONTO



Discussion of the Hog Sector

*Martin Rice**

I wish to thank the organizers of this Conference for inviting me to comment on Jan Dyer's overview of implications of the 1986 census data for structural change in the Canadian livestock sector. It gives myself, as a hog producers' association executive, the opportunity to talk to farmers at some length about their careers and where their industry is going, rather than about our national agenda, which is what I am hired to pay more attention to.

Secondly, it gives us some exposure to data that with each census become beyond the means of many more users. Prior to receiving Jan's paper, I was interested in obtaining information in a format similar to that in two separate statistical tables, contained in a 1981 census publication, which was priced at $7.50. By 1986, the asking price for one of these tables was $60 and the other was going to be substantially more than that because it had not been assembled. Jan's overview, however, goes a long way to satisfying these needs.

Her principal observations for the hog sector are the following:

- Hog farms are fewer in number, particularly in the smaller categories, as well as larger in size, although the increase in pig numbers per farm was primarily in western Canada.
- An increasing proportion of the hog population is from larger farms, which are more specialized in pork production, although in Quebec the sector is indicated to have become significantly less concentrated.
- Farrow to finish has become the dominant basis of production.
- At least with respect to variable costs, there appear to be insignificant economies of scale beyond a sales class up to $250 000.
- Indebtedness as a proportion of assets increases with increasing farm size.

With a couple of minor exceptions, I find little to disagree with in Jan's observations. I mostly would like to offer some further elaboration on what is behind some of these trends. Before I get into that, however, I would like to extend the regional distribution of Canada's hog population back a bit further in time. Referring to Table 1 we can observe the sharp changes from census to census and the appearance of cycles, which can be quite different between provinces within the same regions.

Hog numbers in Quebec followed a lengthy upward climb for some of the reasons already mentioned in Jan's paper, peaking in 1981 and since falling by 15%.

The pig population in the Prairie provinces generally has been subject to the greatest variation over time, with numbers doubling from 1966 to 1971 and falling by half over the next five years. Ten years later, Manitoba had climbed back to exceed the 1971 peak, while Saskatchewan had only partially recovered from the 1976 low. However, production in this latter province can change very markedly, as evidenced by Saskatchewan's hog numbers, which were well over 700 000 just one year prior to the 1986 census, and it is likely again to be closer to that higher figure at present.

Looking at the percentage distribution (Table 2), the relative shares of the Maritime provinces and Ontario have remained within a fairly narrow band, with Manitoba's share showing a similar trend. British Columbia moved quickly to a new plateau from 1976 to 1981, from which there has been a slow but steady decline since. As previously mentioned, the pattern in Quebec, Alberta and Saskatchewan has been much more variable.

I do not intend to go into all the possible reasons for these contrasts in trends between provinces and regions, although grain prices and sales opportunities as well as public policies in areas such as transportation and environment would undoubtedly be included. I would suggest that two factors for increased hog numbers in the West from 1981 to 1986 were the downward trend in grain market returns and the opportunity provided by hog production for expansion and for new entrants to agriculture, given the difficulty of covering land costs following the peak in land values and during the period of high interest rates early in this decade. The decline in Quebec is partly explained by increasingly strict environmental regulations, which have resulted in some hog operations being closed down entirely. In all provinces, the capital intensiveness of present-day hog production technology tends toward greater stability in hog numbers than in the past.

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* Executive Secretary, Canadian Pork Council.

Moving back to the individual farm level, the clearest trend is toward the farrow-to-finish organization of hog production. There are at least three important reasons for this development, the first being animal health. With the conversion of confinement housing and the increasingly critical need to avoid the productivity losses associated with the stress of transport and from transmissible diseases, more hog farmers have moved to keeping pigs from birth to market in preference to moving and mixing stock from different sources.

A second factor, which encourages farrowing operations to decide to feed their own piglets to finish, is the modest additional labor required to grow them to market weight. Between 75% and 90% of the labor hours invested in a finished hog are said to be incorporated in getting the animal to the stage where it could be sold as a weanling for finishing. Although the proportion of capital is less than this, more than two thirds of the finished hog market return can be captured with the final bit of labor.

The third factor leads the specialized finishers to consider setting up their own sow operations. Because of the lack of an organized grading or other quality differentiation system for weaner pigs, the specialized farrowing producer is less able to obtain the price premiums in order to recoup the investment in genetic improvements of breeding stock that are so important to achieving better finished hog lean yield results. The notable exceptions to this are the larger, specialized weanling operations and sales companies, which have acquired a reputation for sound breeding and quality weaner pigs and can obtain a price premium for their piglets.

On the trend to decreased concentration in Quebec, the apparent shift to smaller independent farms may be in large part due to modifications to contractual provisions, which, while permitting certain government program benefits to be received by formerly integrated production, still maintain in many cases a close economic association between the farm and a feed supplier, for example.

One recent development in that province is the entry into agriculture, and particularly the hog sector, of the *société en commandité* form of business organization, or what is often referred to in English as "limited partnership." In very simple terms, through the contracting of production facilities to the *société*, and the selling of shares in the assets to investors, the participating agricultural producers are able to obtain equity captial from outside of their own capital investment, and certain tax advantages may be passed along to the investors. The current guess is that there are between 5 and 10 such arrangements active in Quebec hog production, and an increase in their number and size could have implications for the structure of the hog industry in that province, although recent and prospective modifications to the tax systems at both the provincial and federal levels might be limiting to much more future development along these lines.

I would like to move along to the apparent lack of significant economies, at least in cash costs, of increasing size in specialized hog farms above annual sales of $100 000 to $250 000, which is roughly equivalent to farrow-to-finish operations of from 50 to 120 sows. There is likely some bias against the larger operations in this cost data in that a larger portion of the labor is hired, and thus a cash cost on the bigger units, than is the case with smaller farms where returns to virtually all the labor may be provided by the proprietor and may not be included as a cash expense. All the same, the rough consensus that emerges is that the most efficient hog production today is typically on a specialized farrow-to-finish operation of 80 to 100 sows, which can be managed by a single family. The size might be increased to 120 to 140 sows to bring in hired help and to permit the proprietors some time away from farming. There is some support for the notion that this ideal single family farm size has more than doubled over the past 20 years or so, in line with newer feeding and barn maintenance technology.

The constraints to moving to 200 sows with correspondingly higher numbers of people involved are not considered to be overly serious, but it is suggested that extremely capable management along with good fortune in acquiring and keeping competent hired herdspeople are required to go much beyond the 200 sows without incurring significantly increasing total costs per hog. A point that might be worth some further consideration, perhaps in the context of agricultural training, is the widely held view that there is a scarcity in Canada of this skilled labor available for hire in the hog industry, compared with the situation in some parts of Europe where the availability of such skilled people, willing to work for others, is an important determinant of the greater prominence of the much larger production units in those countries. The tendency in Canada is for such individuals to want to farm on their own. However whether this has any real importance for our production costs is not at all clear.

There does not appear to be much support for the notion that substantial economies in fixed costs are available from continuously larger operations. A 300 sow enterprise generally requires not much less than three times the quantity and value of capital investments of 100 sow unit.

Finally, and partly following from this, the rising debt per dollar of assets associated by the census data with increasing farm size may be partly explained by the fact that larger farms are expanding, hopefully with success in achieving greater efficiencies. However, the management and labor constraints identified earlier are thought to be limiting factors and, although balance sheets will generally have improved with the better hog prices that have been experience since the July 1, 1986, census date, this high debt could yet be a problem for these larger units during the tougher times anticipated during the next while.

For the future, we can expect a continuation of many of these same influences on structure. Further to that, limitations on manure disposal, not only in Quebec but also in other parts of Canada, will be constraining to expansion. The introduction of a commercially applicable porcine somatotropin could have a profound impact on numbers and distribution, depending on the rates of adoption. With respect to technology, there do not appear to huge labor-saving devices on the shelf to incorporate into the operations that are already efficiently laid out, but improvements in smaller increments will continue.

There definitely are many exceptions to the points made here and generalization are always difficult to make. But this is part of the reason the hog industry is a fascinating one to observe as well as to work for.

TABLE 1 NUMBER OF PIGS ON FARMS

	1961	1966	1971	1976	1981	1986
				(000)		
Maritimes	148.9	174.5	236.9	192.1	345.9	352.1
Quebec	912.1	1 173.7	1 183.6	1 617.1	3 440.7	2 927.8
Ontario	1 686.3	1 935.6	2 361.7	1 913.7	3 165.8	3 118.6
EAST	2 747.3	3 283.8	3 982.2	3 722.9	6 952.4	6 398.5
Manitoba	431.5	499.2	1 070.6	625.9	875.0	1 071.2
Saskatchewan	640.8	488.2	1 145.3	491.3	574.3	599.0
Alberta	1 470.0	1 092.7	1 815.5	878.2	1 199.4	1 454.8
B.C.	41.6	37.4	78.6	55.6	254.9	216.7
WEST	2 583.9	2 117.5	4 110.0	2 051.0	2 903.6	3 341.7

Source: Statistics Canada, Census of Agriculture.

TABLE 2 DISTRIBUTION OF PIGS ON FARMS

	1961	1966	1971	1976	1981	1986
				(%)		
Maritimes	2.8	3.3	2.9	3.4	3.5	3.6
Quebec	17.1	21.7	17.1	28.0	34.9	30.0
Ontario	31.6	35.8	29.2	33.1	32.1	32.0
EAST	51.5	60.8	49.2	64.5	70.5	65.8
Manitoba	8.1	9.3	13.2	10.8	8.9	11.0
Saskatchewan	12.0	9.0	14.0	8.5	5.8	6.1
Alberta	27.6	20.2	22.4	15.2	12.2	14.9
B.C.	0.8	0.7	1.0	1.0	2.6	2.2
WEST	48.5	39.2	50.8	35.5	29.5	34.3

Source: Statistics Canada, Census of Agriculture.

Changing Production Structure of Red Meats in Canada

*Charles A. Gracey**

These are surely interesting and critical times for the cattle industry in Canada and indeed in North America. I have had the opportunity to review Janice Dyer's paper on structural change in the livestock sector. I believe that she has portrayed quite accurately the adjustments in numbers and distribution that have occurred.

The first observation I would make is that the cattle industry is in about as good a position as it could possibly hope for from which to plan its assault on the future. We cannot forget that this is an era of surplus and cheap grain and, as Douglas Mutch of the Livestock Feed Board of Canada has said, we are now witnessing the transformation of grain surplus problem to a meat surplus problem. I need not attempt to explain that. It is obvious that the best and most assured market for feedgrains is domestic livestock production. Hence, we see forecasts of surging increases in pork and poultry production throughout North America. The other day – quite unbelievably, but confirmed nonetheless – turkeys were being specialed in Chicago for 19 cents per pound. If this trend continues much longer, turkeys will soon be selling for what they are worth. Please forgive that aside; you do not need me to tell you that turkey meat is a fine and wonderful product – but so is humor.

The point is that poultry and pork production can and does expand more quickly in response to opportunity than does cattle production and is doing so now. Cattle production is right now at the bottom of its long-term cycle, is poised to expand, may expand slowly but is much better positioned at the bottom of the cycle to withstand the uncertainties of the next two or three years.

There is finite effective demand for meat and if it does not concern us, we should at least note that in 1988 the North American consumer will have access to record per-capita supplies of total meat. And the new record is not going to be established by a whisker. The old record will likely be smashed, à la Ben Johnson, by 4 or 5 pounds per capita.

I think that is important background to the structural changes that are occurring in the cattle industry. I do not pretend that I can see them all or can assess them properly but I will try as best I can to identify the major trends:

- There are, first of all, significant changes in occurring in the location of production.
- There are modest but significant changes occurring in the cow-calf sector.
- There are major changes occurring in feedlots in terms of concentration and consolidation together with a remarkable concentration of ownership.
- Marketing and marketing practices are changing dramatically and, I believe, progressively.
- The product is changing, not in all cases for the better.
- Finally and most importantly, the Canadian cattle industry is becoming completely and comfortably integrated into the larger North American industry and is showing leadership direction and innovation that greatly exceeds its proportionate size.

Let me briefly explain and defend each of these six propositions.

In Canada, the cattle industry appears to be shifting westward. There has been no observable change in the distribution of mother cows; 85% of them are still west of the Ontario-Manitoba border. What is noteworthy is that Alberta is feeding out a higher proportion of the fed cattle and Ontario is feeding less. Is this westward shift a short-term phenomenon based upon the current surplus supply of relatively cheap feedgrain or is it the beginning of a fundamental shift? Craig Fulton says this trend will continue through 1988-89.

The cattle feeding industry is virtually static in Saskatchewan and is declining in Manitoba, the province with the most inhospitable political climate for cattle feeding in Canada.

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*Executive Vice President, Canadian Cattlemen's Association.

Ontario once was the major cattle-feeding province in the nation but for many years now has been the second largest. That ranking is not threatened for the foreseeable future but Ontario is falling further behind Alberta as the years pass.

This need not continue. Changes have been made to ease the importation of feeder cattle from the southeast United States and still further relaxation is likely. I can foresee Ontario again becoming a very major feeding province with the importation of 100 000 or more U.S. feeder cattle, a distinct and desirable possibility.

Cow-calf production can and will likely expand in all parts of Canada as the cycle builds, but I do not foresee any relative shifts in the location of cow-calf production. In the last liquidation phase, Saskatchewan lost the most beef cows.

The most remarkable change in the cow-calf sector is, of course, the productivity of the cow herd. In the late 1960s, we witnessed the demise of the two- and three-year-old grass steers as the industry began to quicken the pace of beef production. That trend is continuing, with relatively fewer yearlings and relatively more calves entering into feedlot.

We are weaning sharply heavier calves than we did one decade ago and more of them per 100 cows exposed. Unless one is actually involved in the industry, one does not see or appreciate these trends, but the progress made in productive and reproductive efficiency is most remarkable. The major contributing factors to this remarkable trend have been crossbreeding first and doing so with a wider variety of breeds second. A third contribution factor has clearly been better husbandry and herd health practice.

The progressive integration of the Canadian and U.S. beef and cattle markets into a North American whole is a phenomenon that has been developing for many years. It is a trend that has on balance been beneficial to the Canadian industry inasmuch as we have exported sharply more cattle and beef to the U.S. than we have imported therefrom. That has been the case in 1987.

But this positive trade balance may not prove permanent. In fact, our exports appear to be declining while our imports from the U.S. are increasing.

Policywise, we still have a seriously balkanized industry. Tripartite stabilization is a sincere attempt to address this balkanization and for our industry has accomplished that goal in three provinces.

As mentioned earlier, the design of support programs in Manitoba is virtually destroying livestock feeding. Other provinces appear to be insisting upon relaxation of the rules of tripartite as a precondition to entry. Cattlemen are quite determined that this shall not occur. I close on this policy issue because many of us believe that the most important thing we may accomplish in 1988 is a resolution of this issue.

GRAINS AND OILSEEDS

Some Policy Responses to Current Grain Surpluses

*A.W. De Maria**

INTRODUCTION

The origins of the present depressed condition of the international grain market are easily summarized. The growth in world production outpaced that of consumption with the result that stocks climbed to unprecedented levels. At first, it was thought that the easier availability of both wheat and feedgrains at such favorable prices would lead to a rapid expansion in world trade. Such hopes proved ill-founded, and the initial complacency of policy makers was replaced by the search for ways to increase exports and to draw down stocks.

Various types of remedial action have been attempted at almost every point of the supply and demand chain, including curbs on production, measures to encourage exports and efforts to seek alternative uses of grain. Some have met with modest success, while others proved unworkable or distorted developments in markets for other commodities. Without exception, all were very costly. Indeed, the very core of the current dilemma is the question of finance. Given unlimited funds, it perhaps would prove feasible to utilize a large proportion of surplus stocks. However, with agriculture the subject of severe budgetary pressure in most countries, this approach is clearly not viable. The ideal would be the implementation of measures that would bring supply and demand into closer balance and avoid the risk of regenerating a phase of stock accumulation.

REVIEW OF CURRENT MEASURES

The countries most affected by the crisis on the international market are those deriving a large proportion of their national income from exports. In contrast with other agricultural commodities, most of them are industrialized countries. This situation in itself can bring further problems, since a government must balance the need for agricultural support with the requirements of other industries. Yet in most cases, it must be stated that grain producers are generally well-organized and, often acting through producers' groups or cooperatives, constitute a vociferous and formidable political lobby.

So to what extent does current agricultural policy match the needs of grain producers? Problems exist in all exporting countries, and bankruptcy has been an unhappy and all too prevalent feature in the past five or six years. The gravity of the farm depression is underlined by the fact that the high rate of failure sometimes occurred despite the enactment of new support measures.

The disparate nature of grain policies merits examination on an individual country basis. The position of some of these countries will be examined in detail by later speakers. I do not propose, therefore, to cover them in detail here, but will merely outline some of their present difficulties and attempts at adjustment.

Argentina differs from the other major grain exporters in that it is a developing country whose economy largely depends on the production and sale of agricultural commodities It is the fifth largest exporter of wheat and ranks second only to the United States in overseas shipments of coarse grains. For several years, the government has raised a major proportion of its total revenue from export taxes on agricultural goods. However, the rate of tax on many of them has been gradually reduced and that on wheat was due to be removed in December 1987. The reason for these changes is to comply with the conditions of a loan advanced by the World Bank to help restructure the agricultural sector.

The government has announced the intention to make good the losses from the removal of export taxes by the imposition of a land tax. As expected, this idea is being strongly resisted by livestock producers. Successful adjustment in agriculture is likely to depend on some form of compromise between the government's need to maintain its level of revenue and the assurance of an acceptable degree of profitability for different farm enterprises. There already has been a shift from wheat to coarse grains and oilseeds. Further changes may prove difficult to accomplish and probably will require substantial investment. Even within the grains sector, there is a serious lack of storage facilities, and ports require modernization if exports are to increase.

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* International Wheat Council.

It would appear that Canada is confronted with the need to make some important decisions in the near future. The most significant relates to the question of quality. It is sometimes said that Canada should give less emphasis to producing, grading and exporting high-quality wheat and should encourage lower-quality but higher-yielding varieties. I know that this topic still provokes intensive controversy, and there seems no way in which a definitive assessment can be reached. It is certainly worth noting that Canada has expanded its share of the world wheat market over recent years and that competitors, especially the United States, are making serious efforts to improve the quality of their grain. A particular difficulty for Canada is that there are few viable alternatives to grain production.

The status of the European Economic Community has changed from that of large importer to a net exporter of grain. High guaranteed prices have encouraged intensive methods of production, and the consequent high yields have led to a situation of persistent surplus. Numerous initiatives have been introduced over the years to reduce the enormous cost of the Common Agricultural Policy. The milk quota system has certainly resulted in an extensive restructuring of the dairy sector. No such far-reaching revision has yet occurred for cereals, although the modifications introduced this year in the intervention system should help to limit expenditure. In the longer term, however, it is likely that some automatic method similar to the proposed "stabilizer" mechanism will prove necessary.

Let us now consider the position of major exporting countries not the subject of individual presentations at this meeting. Australia is unique within the group because its support prices for wheat are determined solely by a precise formula that automatically takes account of the actual trend of wheat prices on the international market. This has meant that they mirror closely prices actually traded. However, the severity of the decline in prices has overrun the price discounting effect of the formula. Thus it is expected that the government will be obliged to make a deficiency payment to cover the negative margin for the 1986-87 season. This would be the first such payment since the underwriting principle was introduced in 1979.

Many Australian farmers have been fortunate in that they were able to switch from grain to other enterprises. They were greatly assisted in making this change by the encouraging rise in prices for other traditional farm products. Salvation for large numbers of farmers came from the rising price of wool, which went up by 65% from Aust $4.85 to Aust $8.00 per kilogram between 1983-84 and 1986-87. Over the same period, sheep numbers increased by 20% from 133.2 million to 159 million, while the area sown to wheat dropped by 31% from 12.9 Mha to 8.9 Mha. Improved prospects for beef were another, if more modest, source of encouragement. Average sale prices rose by 25%, and cattle numbers now stand at 23.3 million head, compared with 22.5 million head in 1983-84.

However, the transfer from grain to livestock cannot continue indefinitely. Australia remains greatly concerned about the fragile financial situation of so many wheat producers. The Australian Wheat Board is anxious to maintain exports and to date, has demonstrated its commitment by maintaining a highly competitive profile on the world market. Nonetheless, a substantial recovery in world prices is required to avoid the risk of heavy government expenditure on support payments.

The predominant position of the United States as the largest grain exporter means the policy changes within that country inevitably influence developments in other countries, exporters and importers alike. The period since 1980 has seen U.S. wheat output swing from a record of almost 76 Mt in 1981 to around 57 Mt this year. This reduction was due to a decrease in area from 32.6 Mha to 22.4 Mha as producers responded to benefits stemming from participation in official Acreage Reduction Programs (ARP). Yet despite this achievement, total supplies of wheat in the United States at the start of the 1987-88 season still amounted to 107 Mt, only 2 Mt down from the level of the previous year.

Several other programs have been introduced with a view to reducing surpluses. Significant among these is the Conservation Reserve Program (CRP), which aims to switch 16 Mha of land into long-term conservation use by 1990. To date, around 2 Mha have been entered, but the rate of participation is expected to pick up fairly rapidly.

Disposal of government-held stocks has been given increasing importance. This has been achieved mainly through extended use of the payment-in-kind (PIK) type of program introduced in 1983. In its revised form, the PIK principle involves making deficiency payments to producers in the form of "generic certificates," which may be sold or exchanged for a given range of commodities held in government stocks. A recent innovation, dating from early November 1987, was the introduction of weekly auctions for CCC stocks. About 10 million bushels of wheat were offered initially, but the amount has increased to about 20 million bushels. Traders receive wheat in exchange for certificates. The auctions are used as a way of easing free market supplies, since such a large proportion of total stocks are in government hands.

Countries other than the major exporters are also experiencing the problem of grain surpluses, even if on a smaller scale. Some have already introduced policies to reduce stocks. Sweden, for example, a regular exporter of wheat, adopted a "fallow compensation scheme" for the 1987 season. The system was voluntary and was aimed at farms having more than 15 ha sown to grains. Producers received a fixed payment per hectare, the rate varying according to location. Initial assessments indicate that about 128 000 ha were entered, resulting in an estimated reduction of 0.4 Mt in output. This amount is about 25% of the average annual export surplus. The scheme will probably continue up to 1990. For 1988, area payments will be increased, and three times the local rate will be paid for land switched to forestry. The area diverted from grain must now be seeded to cover crops, and the target is to take about 200 000 ha out of grain production. Output may also be reduced by taxes on fertilizers and herbicides.

Some importing countries also are facing problems of excess supply. They have a surplus of some grains but deficits of others. In Switzerland, there is a structural imbalance between the production of breadmaking and feedgrains. Consideration is now being given to the implementation of a system of adjustable price differentials for various grains, a general reduction in prices for all grains, or the fixing of prices each year in relation to the size of the national crop.

Japan is second only to the USSR in terms of grain imports. Yet the country has known surpluses of rice since the late 1960s. In 1970, the first of a series of adjustment programs came into effect to try to limit the growth of excess supplies. At the present time, there has been a revival of interest in the use of rice in livestock rations. In the early 1970s, as much as 1.5 Mt of rice was consumed in this manner. The figure for 1983 was 0.6 Mt, and feed use has been minimal since then. Considerable research is now devoted to breeding varieties of rice more suited to feed use. The possibility exists that new policy measures might be adopted to encourage farmers to switch to feed rice, with obvious implications of a possible reduction in imports of coarse grains. The price of rice for the 1987 crop was lowered by nearly 6%, the first reduction since 1956. Nevertheless, it still remains at 17 557 yen per 60 kilograms of brown rice, or around U.S. $1 991/t. The price for top-grade wheat is U.S. $1 224/t.

EXPORT POLICY DEVELOPMENTS

My remarks so far have dealt with attempts to control surpluses by the limitation of production. It might be thought that more rapid results could be achieved by an expansion in consumption. Overall domestic grain requirements in the major exporters vary little from one season to the next. In some years, use of one grain may increase, but this usually involves the displacement of another. The obvious example is the substitution of wheat for maize (corn) in animal feed in the United States, where price relationships determine the amounts of each grain fed. The alternative outlet for surplus grain is therefore the export market.

Unfortunately there are no easy solutions to be found in this direction. Total demand has not kept pace with expanding availabilities, and international trade is rightly described as a "buyers' market." In an attempt to maintain market shares, exporters have resorted to numerous innovative selling practices, many involving a high degree of price dissimulation.

It might be said that the United States has exhibited an extraordinary zeal in its efforts to expand exports. Certainly some action was required, since its share of total world wheat trade declined from almost 50% in 1981-82 to only 28% in 1985-86. In the first instance, funding under basic credit programs such as GSM 102 was increased. Later the short-lived "blended credit" scheme was introduced, only to be withdrawn when it was ruled to contravene certain aspects of U.S. maritime law. There then emerged the aggressively titled BICEP program, later renamed the Export Enhancement Program (EEP).

This new export program has had an immense influence on the course of world grain trade. It has become such a familiar feature of the market that its origin and intent are easily overlooked. The declared purpose was to targe EEP allocations to those markets where it was considered that U.S. exports were facing "unfair" or subsidized competition. The first offers were made mostly to areas where the EEC was the major supplier. Latterly, however, there are few importers who are classed as ineligible. Even wealthy countries like Saudi Arabia, Switzerland and Finland have benefited. At the present time, the major proportion of U.S. wheat exports are shipped under EEP arrangements. As of December 6, 1987, total offers of wheat to 40 countries under the EEP totaled 36 Mt, of which 25 Mt have already been purchased. The average subsidy, paid in generic certificates, on wheat allocations was U.S. $35.14/t. Over 2 Mt of flour have been offered, with sales of 1.5 Mt and an average subsidy of U.S. $90/t. Barley and sorghum offers total 5.9 Mt and sales 4.7 Mt, with a subsidy of around U.S. $40/t.

No other exporting country has introduced a program in direct response to the EEP. The EEC has been obliged to compete by granting larger export refunds, sometimes as much as U.S. $150/t for wheat. Those with more limited resources (Argentina, Australia and Canada) have tended to improve the credit terms on offer, but most have competed by reducing prices. The importing countries, particularly those large purchasers like China and the USSR, have been able to play off one supplier against another. In effect, they are able to cover most of their needs at EEP prices, regardless of origin.

One is led to question what benefits have accrued to exporting countries from their unflagging competitive efforts of the past few years. All that has happened is that market shares have been maintained or increased at huge financial cost. The overall trade creative effect is negligible. Traditional supply patterns have changed according to which exporter was prepared to offer the most favorable prices and credit at any given time. A few figures illustrate this point well. Total world wheat trade amounted to 88 Mt in 1986-87, compared with 94 Mt in 1980-81. China and the USSR account for the greater part of annual variability in demand. If these are excluded, it is then seen that there has been no sustained increase in trade. World exports (excluding China and the USSR) reached a peak of nearly 70 Mt in 1983-84 when India entered the market, but then declined to only 61 Mt in 1986-87. Thus world trade over that period did not rise as expected, even with the benefit of historically low prices. Total world imports in 1987-88 are forecast to increase by 10 Mt to 98 Mt. Once again, however, China and the USSR will account for 8 Mt. The additional 2 Mt will substitute for rice in Far East Asia, where bad weather cut paddy production.

RETHINKING SUPPORT MEASURES

The accusation is heard that agricultural policy makers have lost contact with reality. They are reacting when they should be leading. Policy decisions are too often a series of ad hoc measures devoid of rationale, providing elegant solutions for yesterday's problems. In fairness it must be stated that many are aware of the need for fundamental reexamination of national support systems, and some encouraging ideas are currently under debate.

The most pressing requirement is to stop considering cereals output solely as a production function. More attention must be devoted to matching output with requirements so that limited finance may be directed to where it is most needed. The weakness of some policies, put simply, is that the more a farmer produces, the more support payments he receives. This type of program inevitably inflates budgetary costs.

For this reason, the "social" aspects of agriculture are drawing increased attention. It is generally accepted that the maintenance of a viable rural infrastructure merits some allocation from public funds. The validity of the notions of "decoupling" and "extensification" lies within the context of thus approach. The practice of producing and storing unsalable surpluses is neither financially attractive nor politically sustainable. Alternatively, the diversion of land to other uses such as general amenity and leisure, nature reserves or forestry holds undoubted appeal. Taxpayers may rightly object to the former, but may be more easily convinced of the virtues of the latter.

The removal of land from agricultural use could prove particularly effective in countries where there is a preponderance of small farms and easy access to the countryside for a large urban population. These conditions exist in western Europe and account for the interest shown there in alternative uses. Recent calculations have shown that leisure and other nonagricultural use could require the allocation of as much as 300 000 ha of land. Schemes are already operational and others will be introduced shortly. In the United Kingdom, for example, Environmentally Sensitive Areas (ESAs) have been designated where farmers will receive acreage payments for following prescribed methods of land use.

OTHER USES FOR GRAIN

Some countries have sought to reduce grain surpluses by seeking outlets other than food and feed use. There always has been a steady, if limited, requirement for grain for industrial purposes, and there have been a few attempts to expand this role. The most attractive option seems to be the production of fuel from grain, which would thus become a renewable source of energy. Unfortunately, the economics of this initiative have yet to be proven. While the process is technically feasible, it is not financially viable when compared with that for other fuels. Briefly the cost of the energy consumed exceed the value of the product obtained.

Despite the dubious economics of the ethanol option, a number of plants are already in operation. The most extensive program existed in the United States to dispose of excess maize (corn) under the gasohol program. But as oil prices dropped, the program was scaled down. Cereal producers in the EEC lobbied strongly for the introduction of an ethanol program, particularly in view of the belated decision to switch to lead-free gasoline.

It was envisaged that the use of wheat derivatives to maintain the octane rating in motor fuel would require up to 4 Mt of grain annually. However, a study carried out for the EEC Commission showed that the introduction of a scheme of this nature would prove excessively costly. Oil companies would be able to produce petroleum-based substitutes more cheaply.

Sweden has limited reserves of natural energy and is committed to the elimination of nuclear power stations. The government therefore has shown considerable interest in all alternative forms of energy, including ethanol. Several plants are already in operation, and some quite novel ideas are in the later experimental stages. One of the most interesting is "wholecrop harvesting." Its advocates maintain that modern cereal production is inefficient. Yields are too low and much of the crop, the straw, is wasted. Their plan would be to cut the crop whole, straw and grain together. The material would be transported to storage areas for subsequent threshing and cleaning. The straw would be used in specially designed cyclone burners to dry the grain or could serve for the manufacture of animal feed or paper products at factory units located nearby. At the present time, these plans seem to belong to the realm of the visionary rather than the practical, but they represent an interesting reexamination of established practices of grain production and processing.

SOME INTERNATIONAL ASPECTS OF CURRENT GRAIN PROBLEMS

So are in this text, the solutions described for the crisis in the grain market do not match the scale of the problem. All the efforts of exporters to increase shipments have proved unrewarding, in that advantages gained have proved temporary and costly. For example, export values for wheat have continued to fall away. National data reveal that the average value of United States exports of wheat dropped from U.S. $178/t in 1980 to only U.S. $122/t in 1986. For Canada, export values peaked at $241/t in 1981 and declined to $183/t in 1986.

At the same time and in spite of such low prices, world trade has not expanded. The reasons are not difficult to find. With grain consumption almost stagnant in the developed market economies, the potential for growth is found in developing countries. Yet this group is unable to increase grain imports because of lack of finance. Export income has been low because of depressed prices for most of the commodities they export. Here the currency conundrum comes into play.

Grain is usually denominated and traded in U.S. dollars. The decline of that currency makes grain prices apparently cheap. However, since developing countries' exports are also expressed in the dollar, and their own currencies are often linked to it, little benefit accrues to them. Indeed, many are hard-pressed to maintain their current level of imports. Some are removing consumption subsidies on products made from imported grain and are diverting scarce financial resources toward improving self-sufficiency ratios.

At this point, it becomes clear that the grain market cannot act in isolation from general economic trends. For this reason, there is much discussion about the position of agriculture, including cereals, in the current GATT round of trade negotiations. Unusually, preparatory work in this sector is ahead of those for manufactured products and services. The latter are included for the first time under the GATT process and, who knows, may even be involved in some cross-sectoral trading with agriculture.

Several proposals have been put forward with a view to dealing with the cereals problem under the GATT. All express the need to bring stability to the sector, but differ with regard to timing and modalities. The United States has suggested a timetable for the elimination of all agricultural subsidies, welcomed by some but considered unrealistic by other GATT members. The Cairns group of self-designated free-trading countries, to which Canada belongs, also has submitted a detailed proposal. Canada also has an individual plan which is based on the use of a single mechanism to convert all measures affecting trade into a single aggregate "trade distortion equivalent" (TDE). The TDE would be gradually reduced over a given period for each trade category, including cereals. The TDE would exclude all production-neutral income transfers.

The EEC proposal involves some measure of price discipline and even of market sharing. All the proposals recognize the need for rapid action and an immediate end to the introduction of new restrictive measures. Similarly, they all concentrate on the enactment of obligations to eliminate trade distortions but accept that some production support measures may be retained if they are considered to include no trade-enhancing effects. One can envisage arduous negotiations over the classification of such a list of measures.

It is interesting that the various proposals distinguish between the production and trade elements of agricultural support schemes. The latter group would probably be fairly rapidly identified. However, trade effects of production measures will prove more complex. There appears to be a recognition that agricultural support will in future be divided into the categories mentioned earlier. Some payments will ensure the survival, if not the prosperity, of small or uneconomic farms. A major and increasing proportion of cereals output is likely to come from large commercial enterprises, which will quickly assimilate all technological advances in order to maximize their productivity.

Situation and Perspectives Regarding the Argentinian Agriculture Sector

*Manuel Otero**

Much has been written on the crisis that, since the beginning of this decade, is affecting the world agriculture trade. This crunch can be defined, without fear of making any mistakes, as the worst in the past 50 years. There is a general consensus on the factors causing the crisis to identify at the top of the list the agricultural policies implemented by some developed countries within the framework of a severe world economic recession. A similar consensus does not exist in the evaluation of the crisis's effects on each one of the agricultural exporting countries. There are also differences in the strategies used by these nations in order to respond to these effects.

To be able to understand the situation and perspectives regarding the Argentinian agriculture sector, it is necessary to keep in mind some particular aspects of our evolution in grain production.

ARGENTINIAN GRAIN HISTORY

A brief analysis of what happened during this century allows us to divide it into three periods.

During 1900-30, Argentina had a predominant role in the world grain trade, satisfying 20% of the wheat demand, being surpassed only by Canada. Even more important was the Argentinian presence in the coarse grain market, participating with 48% of world trade, while the United States barely reached 7% (Table 1).

After World War II and until the beginning of the 1970s, the Argentinian grain production suffered a serious standstill. Consequently, our participation in world trade decreased abruptly, a mistake that was obviously quickly capitalized by other competitors. So during the quinquenium 1971-75, Argentinian participation in wheat trade was reduced to less than 3%, while in the case of coarse grains it was around 10%.

From the mid 1970s up to 1985, there is a third period in which a combination of internal and external factors resulted in a rapid growth in grain production (5% annually), obtaining during the 1984-85 crop year a record high production of 44 Mt. This increase, not based in the utilization of any kind of subsidies, allowed Argentina to regain during 1981-85 some of the lost ground in the international markets, reaching up to 7% for wheat and 12% for coarse grains.

THE CRISIS

The record of 44 Mt coincided with Argentina's return to democracy and the hope of reaching the ambitious goal of 60 Mt of grains by 1990. Unfortunately, the deepening of the trade war unleashed by the United States and the European Community (EC), in addition to the devastating effects of the Food Security Act of 1985, have put an end to the growth period of Argentinian agriculture.

As a consequence of the absolute exposure of Argentinian farmers to every signal from the markets, during the last two years the sown area was cut back by 16.5%, while production fell by 22% (Table 2). The fall in production in addition to increases in domestic grain consumption have eroded the grain export volume, which fell by 43% between 1984 and 1987 (Table 3). In value terms, exports declined during the same period by 60% (Table 4). Taking into consideration not only grains but also oilseeds and by-products. The accumulated losses during 1985 and 1986 totaled more than $2 billion.

SOME COMPARATIVE FIGURES

The decline in agricultural prices showed how vulnerable the Argentinian economy is for coping with the crisis. This fragility is closely linked to the role of the agriculture sector in the context of a developing nation's economy. Some comparative economic indicators confirm the above (Table 5).

Note, for example, the importance of agriculture in GNP. In the case of Argentina it is 15%, two times greater than that for Australia and five times greater than that for the United States or the EC. Even more important is the role of agricultural exports, which makes up to 70% of total Argentinian exports, followed far behind by Australia with 35%.

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The Argentinian dependency on agriculture is heightened by the urgent need of the country to service its foreign debt, which totals $54 billion, a figure equivalent to 85% of the Argentinian GNP. The American debt, instead, hovering $200 billion represents only 5% of the United State's GNP. During the last few years, the Argentinian capacity to service that debt through its agricultural exports has been seriously deteriorating (Table 6). Once again let me emphasize that our capacity to at least service the debt is impaired by our own creditors, whose protectionist policies put a limit on our intentions both to honor our obligations and to promote growth.

AGRICULTURAL POLICIES

As a rule, the agricultural policies implemented by developed countries, especially the United States, EC and Japan, have been financed thanks to the transference of resources from other areas of the economy. In these industrialized societies, the taxpayers and the consumers are the ones who support, through generous subsidies, the maintenance of the agricultural sector.

The opposite picture can be described in developing nations, where the agricultural sector is the one that transfers resources to other areas of the economy. The farm sector in these countries have two purposes: on the one hand, it provides people with cheap food and, on the other hand, it generates fiscal revenues.

Argentina cannot avoid its condition of being a developing country, reflected in 50 years of agricultural policies that have not served to realize the enormous potential of its agriculture sector. Domestic policies in Argentina were based on the premise that there is a surplus that can be transferred to subsidize nonagricultural areas of the economy. This transfer has been accomplished by using two basic mechanisms: overvaluating the exchange rate and imposing export taxes. The relative importance of each tool has varied through time depending on macroeconomic strategies. But the net result has been the same: domestic prices have been kept well below international levels.

Another characteristic of Argentinian agriculture is the high relative cost of technological inputs, which has resulted in a low utilization and consequently in poor yields that are in discrepancy with the potential of Argentinian soil. Fortunately, in the present scenario characterized by such depressed prices, the low costs of production have enabled Argentina to remain competitive, regardless of the heavy use of export subsidies by some other competitors.

A recent study made at the Ohio State University clearly demonstrates the great competitiveness reached by Argentina (Table 7). In the case of wheat, our costs are half those of the United States, Canada or France. Regarding corn, Argentinian costs are 30% less than those of the United States. A similar conclusion can be drawn for soybeans.

Our low production costs and the concentration of our production at the time when world demand is down has compensated, until now, for our disadvantages in the marketing system. Nevertheless, it is necessary to recognize that the structural deficiencies of our ports, the high cost of transportation and the lack of resources to finance our sales are outpacing the great efficiency Argentina has up to the farm gate and obviously are having a detrimental effect on farm income.

STRUCTURAL ADJUSTMENT

Perhaps the only positive aspect of the crisis, regardless of its nature, is that it brings to light structural deficiencies that under other circumstances would have gone unnoticed. This in turn stimulates the decision-making process to put into effect corrective measures. The agricultural crisis that started at the beginning of the 1980s is a clear example of it. At the international level, the statements of the last two economic summits and of OECD ministerial meetings have shown the political will to begin to consider the dismantling of protectionist policies on a multilateral basis. On the domestic side, the crisis and its effects have shown that the strategy applied during the last decades to the Argentinian agricultural sector is exhausted. It also reveals that this sector cannot keep transferring resources to the rest of the economy if, at the same time, it is expected to be the moving wheel of the whole economy.

Thus, after almost 30 years of enforced export taxes, in July 1987 the democratic government decided to completely eliminate taxes on wheat and coarse grains and also impose an important reduction for oilseeds. At the same time, the exchange rate, which was almost always overvalued and consequently has acted as another obstacle for Argentinian exports, was changed, becoming a positive factor that will allow Argentinian agriculture to show its real competitiveness.

Within this set of short-term measures, it is necessary to point out that the Argentinian government has decided to correct the serious inefficiencies plaguing the marketing system. In the near future, the terminal elevator network owned by the Argentine Grain Board will be transferred to the private sector. Furthermore and after many years of discussions, the modernization of the Bahia Blanca Port will be carried out.

All the measures mentioned above have contributed to change, at least partially, the attitude of Argentinian farmers caught in a pessimistic atmosphere during the past two years. As a result, official projections indicate that the downward trend in grain production will be reversed during the 1987-88 crop year, reaching a level of 36 Mt, which is 12% above the level of the previous harvest.

But since Argentina is a taker of prices and is unable to modify the scenario in the international trade, it is evident that the package of measures listed above are mere palliatives for neutralizing the effects of the cross-fire of subsidies coming from both sides of the Atlantic Ocean. In this regard, one of the issues that worries us greatly is the possibility that the subsidy battlefield may move toward Latin America, which, needless to say, represents a natural and vital market for Argentina. This territory is no longer free of disruptive practices after two years of existence of the Export Enhancement Program.

Finally and in the long term, Argentina is firmly committed to continue to actively participate in the Cairns group, which has become the third basic pillar, together with United States and EC, of the GATT negotiating process in agriculture. We are convinced that, based upon the Cairns group proposal's objectives in the long run, its relief measures and the special treatment for developing nations, it is the most complete and realistic of all the proposals tabled to date. At the same time, it is imperative to implement a set of emergency measures that, without losing sight of long-term goals, provide some degree of relief to those countries that in no way have generated this crisis but that nevertheless, under the present circumstances, have been forced to share its adverse effects.

TABLE 1 ARGENTINIAN PARTICIPATION IN WORLD GRAIN TRADE

	Wheat			Coarse grains*		
	World trade	Argentinian exports volume	Share	World trade	Argentinian exports volume	Share
	(Mt)		(%)	(Mt)		(%)
1934-38	17.1	3.3	19.3	15.4	7.4	48.1
1946-50	23.4	2.1	9.0	10.4	2.7	26.0
1951-55	26.2	2.4	9.2	14.6	2.0	13.7
1956-60	29.8	2.5	8.4	19.3	2.9	15.0
1961-65	50.2	3.2	6.4	33.5	3.8	11.3
1966-70	54.3	2.9	5.3	43.3	5.6	12.9
1971-75	68.7	1.9	2.8	67.2	6.4	9.5
1976-80	80.5	3.9	4.8	96.4	8.6	8.9
1981-85	101.0	7.1	7.0	96.0	11.6	12.1

* Includes rye, barley, oats, corn, millet and sorghum.

Source: Argentine National Grain Board.

TABLE 2 ARGENTINIAN GRAIN SECTOR

	Planted area	Harvested area	Yield	Production
	(Mha)	(Mha)	(t/ha)	(Mt)
1983-84	23.0	19.3	2.13	41.1
1984-85	22.3	18.6	2.36	43.8
1985-86	21.1	18.0	2.11	38.1
1986-87	19.2	15.8	2.02	32.1
Variation				
1983-84 to 1986-87 (%)	-16.5	-18.1	-5.2	-21.9

Source: Argentine Secretariat of Agriculture, Livestock and Fishery.

TABLE 3 ARGENTINIAN EXPORT VOLUME OF GRAINS, OILSEEDS AND BY-PRODUCTS

	Grains		Oilseeds		By-products	
	Volume	Change	Volume	Change	Volume	Change
	(Mt)	(%)	(Mt)	(%)	(Mt)	(%)
1984	22.0		1.25		3.82	
1985	23.8	1.8	1.54	0.29	4.67	0.85
1986	16.5	-7.3	1.81	0.27	5.60	0.93
1987	12.5	-4.0	1.54	-0.27	5.18	-0.42
Variation						
1984 to 1987 (%)		-43.2		23.2		35.6

Source: Argentine National Grain Board.

TABLE 4 ARGENTINIAN EXPORT VALUE OF GRAINS, OILSEEDS AND BY-PRODUCTS

	Grains		Oilseeds		By-products		Total	
	Value	Change	Value	Change	Value	Change	Value	Change
	($ billion)	(%)	($ billion)	(%)	($ billion)	(%)	($ billion)	(%)
1984	3.221		715		754		4.690	
1985	2.934	-287	857	142	500	-254	4.291	-399
1986	1.862	-1072	615	-242	758	258	3.235	-1056
1987	1.325	-537	512	-103	750	-8	2.587	-648
Variation								
1984 to 1987 (%)		-58.8		-28.4		-0.5		-44.8

Source: Argentine National Grain Board.

TABLE 5 MAIN AGRICULTURAL ECONOMIC INDICATORS AMONG GRAIN EXPORTING COUNTRIES, 1986

	Argentina	Australia	Canada	U.S.	EC
GNP ($ billion)	63.0	150.0	225.0	4 000.0	2 440.0
Agricultural GNP (%)	15.0	7.0	3.0	2.5	3.3
Agricultural exports ($ billion)	5.7	8.1	7.1	30.5	25.0
Total exports ($ billion)	8.4	23.0	88.0	213.0	638.3
Agricultural exports as a share of total exports (%)	68.0	35.0	8.0	14.0	4.0

Source: FAO.

TABLE 6 RELATIONSHIP BETWEEN GRAIN AND BY-PRODUCTS EXPORT VALUE AND ANNUAL SERVICES OF EXTERNAL DEBT

	1984	1985	1986	1987
Grain exports and by-products value ($ billion)	4.70	4.30	3.23	2.60
Interest on external debt ($ billion)	5.78	5.30	4.43	4.42
Asset/debt ratio (%)	82	80	73	58

Source: Argentine Economy Ministry.

TABLE 7 PRODUCTION AND MARKETING COSTS OF CORN, WHEAT AND SOYBEANS IN VARIOUS COUNTRIES, 1986

		Costs				
	Yield	Variable (1)	Fixed (2)	Total production (3)=(1)+(2)	Marketing (4)	Total FOB (5)=(3)+(4)
Corn						
Argentina	3.36	45.60	39.62	85.22	30.46	115.68
Thailand	2.07	43.98	35.18	79.16	33.92	113.08
United States	6.43	58.70	60.52	119.22	25.10	144.32
France	6.88	91.52	109.05	200.57	32.80	233.37
Wheat						
Argentina	1.81	42.26	40.34	82.60	29.50	112.10
United States	2.24	68.27	91.21	159.48	30.60	190.08
Canada	1.94	57.66	104.67	162.33	30.80	193.13
Australia	1.50	42.45	77.02	119.47	35.40	154.87
France	6.36	48.36	116.81	165.17	32.80	197.97
Soybeans						
Argentina	2.10	79.80	69.10	148.90	36.14	185.04
Brazil	1.80	121.96	76.45	198.41	43.50	241.91
United States	1.95	88.36	154.78	243.14	24.60	267.74

Source: Ohio State University.

Perspective on Internal Adjustments of the EEC Grains Sector

*Ian D. Grant**

These are difficult, uncertain and confusing times. I am a cereals producer as well as an elected farm leader. In both capacities, I am sure that history will see the late 1980s as a period of radical change in agriculture and its affairs and in the lives of many who live and work in rural areas.

As a Scottish farmer, I certainly have an acute personal perception that the new challenges of the market, the changes in our economic, social and political environment and the opportunities and problems of technological change and the related possibilities for quantum increases in productivity factors are all impacting on agriculture in my part of the world in ways as profound and as far-reaching as the way we were affected last century by the opening up to the plough of the great plains of North America, which caused a bit of an upheaval, I can tell you.

The great plains of Norh America are manifestly with us still.

The purpose of this article is not to apologize for Europe or for the agricultural policy of the European Economic Community but to make a small contribution to what I hope will be a process of detente, *glasnost* and *perestroika* and to see how we can intelligently reconstruct farm policies at the international level to ensure that farmers, their families and their descendants will have a decent future.

I freely confess that not every farmer in Scotland has all the attributes of a philosopher king (though there are even fewer in England and in the other 11 member states of the EEC). It is equally a fact that it is widely understood throughout the farming industry on my side of the Atlantic that self-interest can be pursued effectively only if we recognize we are in a global market. We cannot in the long run hope to isolate or insulate ourselves from what is happening in the world. Equally, we are ourselves part of the world, entitled like everyone else to defend our legitimate interests, but realizing that in doing so it is, at its lowest, at least prudent to pay regard to the interests of others.

These are not empty words. We in Europe have come a long way indeed in these past 30 years to create a partially, an imperfectly, but an increasingly united Europe in a common market with a population of 320 million and stretching more than 2 000 miles from the Shetland Isles, which are on the same latitude as Greenland, to Crete, which lies in the Mediterranean on the same latitude as Syria and Iraq. Farmers number approximately 8 million in the Community, 80% of whom farm fewer than 20 ha. So you will see that we are well accustomed by now to promoting and defending our interests in the intricate process of give-and-take, which the day-to-day conduct of the affairs of the European common market demands.

No sector of the economy has been affected more than agriculture by the development of the common market. While the EEC has good and noble aspirations to do with asserting that Europe cannot allow itself to be elbowed out of the way by the world's superpowers, there are as yet few achievements of any substance in the way of coordinating other institutions and policies at European level except agriculture, which is itself the cornerstone and still the biggest single building block in the structure of the EEC. It is not at all surprising, given our recent history, that security of food supplies for our 320 million population is something taken very seriously indeed in Europe. Still we have no common tax policy, no common defence or education or health or social security budgets. While it is true that 65% of the EEC budget is spent on agriculture, the cost of the Common Agricultural Policy (CAP) is about 0.5% of the gross domestic product of the 12 member states of the EEC, and the cost of European farm support is less than the U.S. farm budget and proportionately away below the figure for Japan.

I want to make these points, which may not be as familiar to you as they are to me, in order to put some of the current trans-Atlantic farm trade controversy in a European perspective.

In similar vein, I am anxious that you should equally understand that, while preference is given to EEC produce in the markets of the EEC, the degree of protection this gives our industry has not prevented more than half our farmers and farm workers from leaving the land in the past 30 years, nor has it prevented the EEC from becoming the world's largest importer of farm produce, taking about a quarter of the world's food exports; unlike the United States, we have a deficit in our farm trade and a deficit with the U.S. in particular.

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Whatever debating points we may exchange, it is, I guess, a universal phenomenon in the western world that farmers everywhere have become too efficient collectively for their individual good; that supply has gotten out of line with demand in commercial terms; that farm incomes consequently are falling; that our asset values are declining; that our indebtedness is rising; and that pressure on farm produce prices is growing as the cost of farm support increases.

Nowhere in my immediate personal experience are these phenomena more painfully evident than in the cereals sector of Scottish agriculture. Consequently I have a compelling incentive to get things right for myself and for the industry I represent. Therefore I want to look in more specific terms at the international situation as seen through European eyes. I want then to go on to give a producer's reaction to proposed policy developments in Europe and, finally, to say a word about stocks and the impending GATT negotiations, because these will be vital for everyone of us who makes a living from the land.

First, let us look at the size of the market for cereals in the 12 member states of the EEC. Our total cereal usage is 140 Mt, of which 35 Mt goes for human consumption and 87 Mt for animal feed. So supplying the European market is very big business indeed.

Secondly, the gap between production and consumption now makes us one of the five major cereal exporting countries along with the United States, Canada, Argentina and Australia, all of whom have been involved in increasing their output in recent years and all of whom must therefore take joint responsibility in finding a solution to bringing supply into balance with commercial demand at international level.

In terms of production area, the land devoted to cereals production in the past 20 years has remained remarkably stable. In some of the member states of the EEC, the cereals planted area has declined to be replaced by oilseed and protein production, commodities in which we are enormously in deficit. Some observers may suggest that the unpredictable and arguably destabilizing element in world trade has to a large extent arisen from the fluctuations in the U.S. planted area. Between 1981 and 1983, the increase alone was well over half of the total Canadian planted area.

Looking specifically at wheat production, the area planted to wheat in the U.S. has increased by 20% over the past 20 years, despite their set-aside programs. I do not see this as an argument against setaside, and I want to come back to this issue later. In the meantime, I want simply to make the point that, without a setaside program and under the influence of severe price pressure, the EEC wheat area has decreased by 15% during the same period. As a final point, on the output side, total grain production in the U.S. again shows a highly unstable but steeply rising trend of production, compared with that in the EEC, where the trend has been much more modest.

Price pressure in the EEC and especially in the United Kingdom has had a dramatic effect on farm incomes. There is widespread concern in our industry about the proposals now being put forward by the Commission of the EEC to introduce what are known as stabilizers as a new and permanent feature of agricultural policy. In passing, I should explain that all policy initiatives must be taken by the permanent EEC Commission on the basis of which decisions are taken by a Council representing the Agriculture Ministers of the 12 member states.

The EEC Commission is proposing to introduce into our cereals market over the next two seasons a system of stabilizers, a misnomer if ever I heard one. The stabilizers, as currently proposed by the EEC Commission, are designed only to stabilize the EEC budget by preventing it from getting out of control, but the effect in the marketplace will be to generate massive destabilization and to destabilize cereals producers' incomes.

The proposal is to establish a target production for EEC cereals, currently suggested at 155 Mt. If production in one year exceeds this target, and this will be assessed toward the end of the harvest, this will trigger proportionate cuts in the intervention "fallback" price at a rate of 1% price cut for every 1% by which the production target is exceeded. The final arrangements have not been agreed upon, but at the moment it is suggested that these prices penalties be restricted to a maximum of 5% in 1988 and 7.5% in 1989. This, it has to be borne in mind, is on top of institutional price cuts in excess of 20% in the last four years.

While 155 Mt is the approximate level of production that has been achieved in Europe in the past two years, it must be remembered that both 1986 and 1987 have seen vast areas of our cereal production adversely affected by weather, either by drought in the south of Europe in 1986, or by floods in northern Europe this year. The intention of the Commission therefore is clear: it is proposing to establish an unrealistically low threshold target for production, which I fear will result in imposition of automatic and heavy price penalties in mid-season over the next two years.

The objective of reducing price and thereby reducing the liability for export restitutions for the limited export surplus we produce may be sensible, but the procedures being suggested take no account of the enormous implications for an already severely pressurized cereal sector and for the consequent effect, not only on agriculture but also on the whole rural structure and balance within Europe.

There is another important element in the stabilizer proposals: similar guarantee threshold schemes have been introduced for oilseeds and are now proposed for protein crops such as peas, field beans and lupins. These crops too will be subject to price reduction on a pro rata percentage basis when production exceeds the trigger level.

Perhaps the greatest criticism of the stabilizer package for cereals, oilseeds and proteins is that, if the schemes were implemented as they stand, then enormous disruption in the market, particularly in the immediate harvest period, is inevitable. The intention is that only once the scale of the harvest has been assessed can the actual level of support price be announced. This assessment would be carried out in September and the announcement made in October. Consider the fact that harvest in the southern countries starts in May and is normally concluded in all countries by mid-September, and I am sure you can appreciate the depression and uncertainty that will surround marketing of the crop.

What is the prospect for those who, either because of lack of on-farm storage space or owing to cash flow pressure from their banks, will be forced to trade under these appalling conditions? The "common" element of the Common Agricultural Policy seems far from evident in such an approach. You will see that the Commission proposals will have a severe effect on an already hard-pressed industry.

We do recognize a problem when we see one, however I accept that, with expenditure running at current levels and with the imbalance that has arisen between supply and demand, we are vulnerable to economic and political pressure, and that it is important to have an agricultural policy that does not become too remote from the dictates of the marketplace. Action clearly needs to be taken to restrain public expenditure, because I cannot defend indefinitely the allocation of resources to produce goods for which no demand exists.

My thesis has been that we in Europe alone are not responsible, and that is why we take enormous interest in the current GATT round of negotiations. If balance and stability are to be found – and found they must be for the sake of the future of all of us – then there must be no question of having European farmers alone accept the burden of adjustment. It must be a multilateral effort.

We in Europe have what I believe to be some solid and positive policy proposals, which we are in the process of arguing through with our goverments and with the Commission in Brussels:

- We would mislead ourselves if we imagined that we would escape any further pressure on commodity prices.

- Price pressure alone is not acceptable, and our own Minister of Agriculture in the U.K. has accepted this. There must be other measures to influence supply, and there must be other measures to help the industry through a period of adjustment and to avoid the destruction of the economy of many rural areas. Frankly these are the stakes we are playing for.

- We see setaside programs as one factor – and an important one – as a contribution to a solution to these enormous problems.

- We believe there is mileage in working with the new environmental and conservation interests. We would like to see the introduction of schemes to encourage farm woodlands in certain circumstances to extensify production; to see the introduction of schemes to enable producers in designated areas to farm in ways that are specifically designed to protect the environment; and to see schemes introduced to encourage diversification into all the new uses for the land now being demanded by an increasingly affluent urban society in what, compared with the situation in Canada, is a small and densely populated region of the world.

- We want to see the development of a diversification into nonsurplus produce, proteins in particular.
- We must exploit new human, animal and industrial uses for these products.

This is our contribution to thinking on this subject. These are the positive things we are prepared to do and to argue through as farmers. The underlying philosophy is the need to reduce production and at the same time to maintain the farming industry as the basic economic activity in our rural areas and indeed as one of the major components in a modern industrial society. But in all of this debate we must remember – and we must remind governments if needs be – that stocks are not of themselves a dirty word. Against the background of all-too-familiar pictures of starvation in Ethiopia and in other parts of the world as well, it would require a curiously ruthless brand of morality to argue that we should not be producing more than is required for strictly commercial reasons.

I think we as farmers are sometimes ambivalent in our attitude. We want to see stocks diminished because they overload and weaken the market and lay us open to all manner of pressures from politicians, from finance ministers and from the media in general. Sometimes they are like an albatross slung around our necks. At the same time, the concept is eminently defensible. Agriculture is still not so safe a productive process as to make it certain, even in the northern hemisphere, that we shall always be immune from the vagaries of climate, and that has been illustrated not infrequently in recent history.

The need for emergency aid is a depressingly recurring phenomenon in the world's affairs. It is also true, speaking in less altruistic terms, that some degrees of intervention by the public authorities is necessary if we are to maintain some stability and some acceptable level of income in the farming sector. Finally, while it is our habit to talk about Europe when we mean the EEC, we must also remember that in 1987 food shortages are still a reality in many countries of eastern Europe, and food shortages and lack of stocks can quickly lead to great social and political unrest. The Poles know all about this.

Stocks are fundamental, necessary and rational tool, both for the proper management of the agricultural economies of the world and a necessary component in the prudent conduct of public affairs in general. We need to recognize that stocks need to be contained, and they must not be used by exporting countries as acts of commercial aggression. This is why I return again to the theme that we are all responsible for achieving the adjustments – and they are marginal adjustments – that will be necessary.

Therefore, for all these reasons we welcome the prospect of a new GATT round, and recognize that agreement will not come about easily or rapidly, certainly not unelss there is something in it for all of us.

The importance we attach to trade can be seen from the fact that we import 60 Mt a year of oils and fats, proteins, cereals and cereal substitutes; we export 30 Mt a year of similar products; and so we are still net importers of 30 Mt of products, which incidentally is exactly the same tonnage as existed 20 years ago.

Sensible international policy is vital for us. While it would be a piece of enormous optimism to suppose that solutions will emerge from this Conference, I hope that nevertheless it will be a contribution to understanding, the kind of understanding that will be necessary if sense is to be achieve.

Impact of Global Grain Surpluses and Trade Conflicts on Canadian Grain Producers

*J.C. Gilson**

The Canadian grain industry has been bedeviled by several negative events during the past five years: a major drought in Saskatchewan and Alberta in 1984 and 1985; the price-depressing effort of increasing world grain stocks; growing trade conflicts; and increasing protectionism in international markets. These major events have left the Canadian grain industry greatly weakened and vulnerable to continuing price declines and uncertainty in global markets.

The impact on Canadian grain producers has been extremely damaging: declining net farm income, net disinvestment in the farm business, and increasing difficulties in the servicing of debt. This distress in the grain industry has spread to other sectors associated with the farm economy; it has reduced earnings, investment and employment in the farm machinery, fertilizer and grain-handling industries; it has increased arrears on farm debt held by private individuals, commercial and government lending agencies; and it has reduced farm consumption expenditures in the retail sector of the economy.

Had it not been for the very substantial public payments to the Canadian grain industry during recent years, the economic situation of the grain producers would have been grave indeed.

The most frustrating aspect of the public cost of the farm relief programs has been the fact that so much of this public expenditure has been "unproductive" in the sense that most of the expenditure has accomplished little more than an offset of the effect of grain export subsidy conflicts in the international market place.

The recent signs of a reduction in global grain stocks should ordinarily lead to a strengthening of grain prices. Whether or not grain prices make any substantial gains during the near future will depend heavily on the outcome of the current grain export subsidy battle between the EEC and the United States and on the progress made on the resolution of agricultural issues under the Uruguay Round of the GATT negotiations in 1988.

EXPOSURE OF CANADIAN GRAIN PRODUCERS TO GLOBAL PROBLEMS AND CONFLICTS

The Canadian agricultural industry has a significantly higher exposure to global trade problems than most other industries in Canada. During the past decade, anywhere from 40% to 50% of total cash farm receipts have been derived from the export market. This proportion can be compared with 20% to 30% in the United States and 10% to 20% in the EEC.

The vulnerability to global trade issues is even more pronounced in Canada's grains and oilseeds sector where more than 70% of the nation's production has been exported.

For the period 1984 to 1985, approximately 71% of Canada's wheat production was exported, compared with 47% in the United States and 27% in western Europe.

It is not surprising that global trade problems and conflicts such as export subsidies, surplus stocks, import restrictions, exchange rate instability and Third World debt issues have such a direct and accentuated effect on the Canadian grain industry. Canada does not have a sufficiently large internal consumer market or tax base to absorb major shocks generated in the international economy.

The disproportionate effect of international trade conflicts on Canada is well illustrated in the grain industry. For example, $1 spent on a wheat export subsidy by the EEC or a $2 expenditure on an export bonus by the United States, calls for a $3 response by Canada to match the effect of the export subsidy conflict. Expressed another way, Canada is on the far end of the whiplash effect of the grain export subsidy competition.

GLOBAL GRAIN SURPLUSES AND THE BATTLE FOR MARKET SHARES

Since the world food scare in the early 1970s, total world cereal production has increased to

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1600 Mt. During that period, food production increased at an annual rate of 2.2%, almost 0.5% faster than world population growth.

Up to 1982, cereal production in the developed market economies exceeded that in the developing countries. Since that time, cereal production in the developing countries began to exceed that in the developed market economies.

Between the three-year average period from 1977-78 to 1979-80 and 1985-86, the increase in wheat production for all major producers amounted to 19%. However, during that same period, the aggregate increase of the EEC, China and India was 49%; the EEC alone increased its wheat production by a whopping 42%.

Between 1981 and 1987, the world stockpile of cereals increased from 229 Mt to 346 Mt, an annual increase of almost 20 Mt. The proportion of this stockpile carried by the United States increased from 28.7% to 46.9%, in spite of the substantial public expenditures by the United States on acreage control programs and the land conservation reserve. During that same period, the EEC's share of the world stockpile of cereals varied between 6.1% and 10.0%.

Between the three-year period 1977-78 to 1979-80 and 1984-85, global wheat exports increased from 77.1 Mt to 102.4 Mt, and then dropped abruptly to 83.2 Mt for the crop year 1985-86. The U.S. market share of the wheat export market increased to a peak of 48.4% in 1981-82 and sank to only 30% in 1985-86. During the past decade, the EEC share of the wheat export market increased from 9.6% to 17.2%. Since 1980-81, Canada's market share has varied from 17.1% to 22.0%.

While the U.S. market share of the world wheat market has begun to increase recently, it was the earlier trends and circumstances which had a major influence on the outcome of the 1985 U.S. Food Security Act. The major objective of the U.S. Farm Bill was to increase the U.S. share of the world grain markets. The primary policy instruments used to achieve that objective have been a greatly reduced loan rate and an expanded set of export enhancement programs.

At the same time, the EEC was being propelled into the export market by growing grain surpluses that resulted from its high internal price support system and few effective curbs on the growing productivity of its grain producers.

Throughout the period, grain production also increased in the less developed countries, partly because of the effects of the "green revolution" in such countries as India, China and Pakistan, and partly because of the drive for greater self-sufficiency in the poorer nations burdened by *payments on a growing external debt.*

The accumulation of large global surpluses of grain, declining grain prices and the battle for market share set the stage for the growing public expenditures on domestic farm programs and the costly export subsidy conflicts that have dominated the global grain markets since 1985.

EXPORT SUBSIDY COMPETITION

From the beginning of the EEC Common Agricultural Policy, one of the important objectives of the EEC was to attain a greater degree of self-sufficiency for many agricultural commodities, including grain. Aided and abetted by its high internal price supports and its variable impact levy system, the EEC increased its productivity to the point where it became a significant grain exporter by the late 1970s. In the absence of any effective production control mechanism, the EEC resorted increasingly to the use of export subsidies to rid itself of these growing grain surpluses.

By January 1982, the EEC maximum export subsidy for exported wheat amounted to U.S. $64.85/t. By January 1987, this maximum export subsidy for wheat exports had increased to $159.85/t. This 1987 EEC subsidy amounted to approximately Can $222/t, which can be compared in turn with the initial Canadian Wheat Board price of $110/t for No. 1 CWRS wheat for 1977-78.

The EEC has been spending in excess of U.S. $1 billion per year for the cereal export subsidies during the past five or six years.

When the U.S. Food Security Act was passed in 1985, provisions were made to reduce the loan rate to a level more closely related to competitive market prices. At the same time, U.S. grain producers were protected by a set of target prices well above the loan rate and prevailing market prices.

In addition to the loan rate/target price provisions, the U.S. Food Security Act provided for a set of export enhancement programs for U.S. grain exports. The 1985 act provided for a total initial funding for the Export Enhancement Programs (EEP) of U.S. $1.5 billion, for the 1986-88 period. It is to be noted that current legislation being debated in Congress would extend the EEP program through 1990 with provision for an additional U.S. $1 billion for the program.

As of October 1987, nearly 20 Mt of wheat were sold under the EEP at an average bonus of U.S. $35/t. Barley sales under the EEP amounted to approximately 4.3 Mt at an average bonus of U.S. $39/t. In total, more than U.S. $1.2 billion has been allocated for bonus payments to [illegible].S. exporters of grain and grain products under the EEP. Total net budget outlays by the U.S. Commodity Credit Corporation increased from $17.7 billion in 1985 and $20.3 billion in 1986 to an estimated $26 billion for 1987. It is clear that the downward pressure on grain prices as a result of the accumulated global grain surpluses has been further reinforced by the grain export subsidy competition and the battle for market shares.

IMPACT ON CANADIAN GRAIN PRODUCERS

The more visible impact of the global grain surpluses and the export subsidy battles on the Canadian grain industry has been the drastic drop in grain prices and the increasing public costs of the special relief programs designed to compensate for that damage.

The less visible but equally destructive consequences of events during recent years have been reflected in farm debt arrears, the erosion of land values, equity and savings, and a significant disinvestment in the farm business. These consequences, if prolonged for the next year or so, could seriously jeopardize the long-run viability of the industry.

Reduced prices

Grain prices reached an all-time high (in nominal terms) during the 1980-81 crop year. Between 1980-81 and 1987-88, Canadian Wheat Board prices for No. 1 CWRS wheat, basis in store Thunder Bay or Vancouver, plunged from $222.12/t to about $110/t, a staggering decrease of 50%. During that same period, the CWB prices for No. 1 Western Barley, basis in store Thunder Bay, dropped from $146.55/t to about $60/t, a total decrease of 59%.

During this period of declining world grain prices, it is to be noted that there were substantial and explicit forms of price support for grain producers in the United States in the form of the target price/loan program, and in the EEC through its intervention of price supports and variable import levy system.

In Canada, the "final price" received by grain producers was comprised of: the initial price paid by the Canadian Wheat Board; ad hoc payments from both provincial and federal governments; and a major reduction in the reserves of the Western Grain Stabilization Program to which grain producers contributed in part during earlier years.

For the most part, the prevailing international grain prices, including the effects of the export subsidies, are reflected directly in the initial prices set by the Canadian Wheat Board. Following the introduction of the 1985 U.S. Food Security Act, under which program the U.S. loan rates for grain were greatly reduced, the Canadian Wheat Board initial price for No. 1 CWRS wheat was reduced from $160/t to $130/t during the 1986-87 crop year. The fact that the Canadian Wheat Board ended the 1986-87 crop year with a deficit was a clear indication that other competitors had undercut the board's greatly reduced initial prices. For the 1987-88 crop year, the Canadian Wheat Board's initial price for wheat was further slashed to $110/t. Between 1985-86 and 1987-88, the Canadian Wheat Board's initial price for No.1 feed barley was dropped from $110/t to $60/t, a drop of 45%.

For the 1987-88 crop year, the U.S. loan rate for HRW wheat, FOB Gulf, was reduced from U.S. $2.28 to $2.17 per bushel. The target price was maintained at U.S. $4.38 per bushel.

Meanwhile, the intervention price support for bread wheat in the EEC was maintained at 179 ECU/t for 1977-78, which amounted to about U.S. $217/t or U.S. $5.90 per bushel. In Canadian currency terms, the corresponding prices to farmers for wheat for 1987-88 were as follows: Canadian Wheat Board initial price of $2.99 per bushel; $5.78 per bushel in the United States; $5.90 per bushel in the EEC.

Falling incomes

Between 1984 and 1987, cash crop receipts in western Canada dropped from $7.2 billion to $6.2 billion. Most of the drop in cash crop receipts during the crop years 1984-85 and 1985-86 was due to the major drought in Saskatchewan and Alberta. The drop in cash crop receipts during 1986-87 and 1987-88 (projected) has been due primarily to the major reduction in grain prices.

A further measure of the substantial reduction in income from crops in the prairies is reflected in the records of the Western Grain Stabilization Program. Between 1983-84 and 1986-87, net returns from the market (as defined by the WGSP) fell from $2.3 billion to less than $1.0 billion, a drop of more than 50%.

The projected increase in realized net farm income in 1987 is due to two major factors: a major increase in government payments to the grain industry, and a substantial reduction in farm operating expenses. As noted below, government payments as a percentage of farm cash receipts in Alberta and Saskatchewan in 1986 represented nearly one quarter of the total receipts; it is expected that this proportion will be even higher in 1987.

In 1987, it is projected that Canadian farmers will incur a capital loss of approximately $7.1 billion. Returns to equity investment in Canadian agriculture are expected to be −6% in 1987, a slight improvement over the −10.3% calculated for 1986.

PUBLIC COST

Total federal and provincial gross direct program payments to Canadian agriculture doubled between 1983 and 1985 and increased by another 50% in 1986. In 1987, it is estimated that the total public payments to agriculture could be as high as $4 billion.

In Saskatchewan, total public payments as a percentage of cash receipts amounted to 4% in 1983; by 1986, this proportion had increased to 24.38% and is expected to be still higher in 1987. In Alberta, 23.17% of farm cash receipts in 1986 came from government payments.

A significant part of the public payments to grain farmers in the Prairie provinces during 1986 and 1987 came from the Western Grain Stabilization Program. The draw-down on the accumulated reserves of the WGSP has been rapid and dramatic; between August 1983 and the end of 1987, it is estimated that the accumulated reserves of the WGSP plunged from a surplus of almost $1.0 billion to an estimated deficit of $1.5 billion.

In addition to the explicit costs of the various public programs designed to provide assistance to Canadian grain producers, there has been a substantial indirect public cost associated with the economic downturn in the grain industry. These indirect costs are reflected in such items as the farm debt arrears and growing deficit of the Farm Credit Corporation, the reported loss of earnings by the grain-handling organizations, the losses incurred in a variety of sectors directly associated with the grain industry such as the fertilizer, herbicide and farm machinery industries, and the impact of reduced farm expenditures on the local rural communities.

A large part of the public expenditures on the grain industry has done little more than to offset the effect of the immediate price reductions in the global grain markets, much of which reduction has been due to the export subsidy competition.

At some point, major new investment will be required in the grain industry to replace the depreciated capital facilities and machinery; savings will have to be generated within the industry to retrieve the considerable farm debt now in arrears; and the accumulated $1.5 billion deficit in the WGSP will somehow have to be reduced through some form of future funding program.

PROSPECTS

The prospects for the Canadian grain industry during the next one to three years will depend on three major factors: the underlying forces of demand and supply in the global grain market; the outcome of the current grain export subsidy competition, and the progress made on the major agricultural issues under the Uruguay Round of the GATT negotiations during 1988.

Recent data suggest that the global grain stocks at the end of the 1987-88 crop year will be almost 10% below those of the previous year. Total global grain stocks as a percentage of total current utilization could be as low as 21% by the end of 1987-88. Experience has shown that, when grain stocks drop to around 17% or 18% of current grain utilization, a major turning point has been reached in the marketplace. Before that point has been reached, grain prices generally start to increase.

It is well to keep in mind that a relatively small increase or decrease in the current global grain stocks will be critical in determining the direction of grain prices during the next one to three years. For example, a mere 5% reduction in global grain production (currently 1600 Mt) during the coming year could reduce the projected 1988-89 global grain stockpile by 40 Mt, enough to bring the stock/utilization ratio down to around 18% or 19%.

It is to be noted that the ending stock/utilization ratios are somewhat higher for wheat and for coarse grains, compared with that for all grains, including rice. During the 1987-88 crop year, world wheat stocks as a percentage of utilization are around 25% compared with 28% in 1986-87; for coarse grains, the ratio for 1987-88 is 24% compared with 26% in 1986-87. But the ratios are indicating a downward direction. It is well to keep in mind, however, that a 5% decrease in global wheat production during 1988-89 could reduce the ending stock/utilization ratio to as low as 19%; by contrast, a 5% increase in global wheat production during 1988-89 could increase the ratio to as high as 28% which is, similar to that in 1986-87.

While no one can predict the outcome of global grain production a year from now, it does appear that the current reduction in global grain stocks provides the basis for some strengthening of grain prices in the near future.

Whether or not the possible increase in grain prices will be fully reflected in the international marketplace, however, will depend heavily on the outcome of the current grain export subsidy conflicts between the United States and the EEC. If recent actions are any indication of what will occur during the remainder of the 1987-88 crop year, one is forced to be cautious about grain price increases during the next six to eight months. It would be ironic indeed if the possibility of a significant price increase in the global grain markets was cancelled out by a continuation of the export subsidy conflict.

The signs are, however, that the export subsidy competition is not over. During the week of November 9, 1987, reports indicated that the USDA approved a wheat sale of 18.4 million bushels to the USSR (11.5% protein hard red winter wheat) at a price of U.S. $2.34 per bushel with a subsidy of 82 cents per bushel. During the same week, the USDA accepted an export bonus bid to sell about 1.5 million bushels of barley to Algeria. It was also during this time that the U.S. Commodity Credit Corporation initiated its weekly auction sales of wheat, with the indication that it planned to dispose of 10 million bushels weekly through the auction sales program.

Meanwhile, the EEC has been active on a number of fronts: continuing use of export restitution on sales of wheat, wheat flour and barley; the EEC Commission's announced intention to relaunch the controversial tax on vegetable oils and fats; and an indication by the EEC through its recently tabled GATT negotiating document that it will press for increased protection for its grain producers by withdrawing the GATT bindings on imports of soybeans and nongrain feed ingredients.

There are few immediate signs that the export subsidy conflicts will abate during the coming months. What progress will be made on the agricultural negotiations under the GATT during 1988 is far from clear, however. Most of the major agricultural trading nations agreed at the OECD conference in June 1987 that there should be an early standstill agreement on any further expansion of agricultural subsidies, either domestically or internationally, and that rapid progress was needed on the rollback of existing subsidies.

Several countries have now tabled their initial negotiating position on agriculture under the GATT. Serious negotiations are to commence in 1988. However, one cannot be confident that the progress on the agricultural negotiations will be rapid. Very fundamental differences still exist among the EEC, Japan and the United States with respect to the basic approaches needed to cope with the major agricultural problems on the agenda. In many aspects, the basic differences among the major GATT participants are not too dissimilar from those existing during the 1973-79 Tokyo Round of GATT negotiations.

If there is one fundamental difference between the Tokyo Round and the present Uruguay Round of GATT negotiations, certainly from Canada's point of view, it is that the current situation in the grain industry appears to be far more fragile and threatening than was the case during the 1970s.

It is almost inconceivable to think about still another round of public payments to the Canadian grain industry next year of the magnitude of those during the last two years. In addition to the public payments, farmers can live only so long on the depreciation of their capital and equipment and can go only so far in terms of further arrears on the payment of interest and principal on outstanding debt obligations.

The public costs of the existing agricultural programs in most countries are enormous and they are growing each year. The damage that has resulted from the accumulation of global grain surpluses and the export subsidy competition has been widespread and immense, particularly in countries such as Canada, where such a high proportion of the domestic grain production must be exported abroad.

The agenda for action is clear. The need for early action is urgent.

The present circumstances indicate that grain producers in almost all the major grain-producing countries would benefit from a substantial reduction in public expenditures on many of the agricultural programs. Competitive subsidies are destructive and they are basically unproductive in the long run. The elimination of the grain export subsidies would almost certainly permit global grain prices to increase in the near future. This is one of the major challenges facing the GATT participants when they resume negotiations in early 1988.

In the final analysis, the odds are that the basic economic forces of the global marketplace will prevail during the coming months, national policies and export subsidies notwithstanding. If that situation occurs, a more constructive mood could develop in the international trade negotiations.

MILK AND DAIRY PRODUCTS

Structural Changes in Dairy Production: Past Changes and Future Direction

*Richard Doyle**

When I was asked to make a presentation for this Conference on dairy production, I was quite enthusiastic in view of both the challenge it represented and my own interest in the subject. I understood only later, however, just how challenging this task actually was. I soon realized that very few reference works exist on the subject and that, with regard to future trends, a great deal of "guess-work" and "crystal balling" was necessary. The projections I make here are therefore based largely on my own personal views and assumptions on where we are heading, rather than on any sophisticated econometric modeling. Keep this in mind as I proceed. I hope that this presentation will stimulate discussion on the challenges ahead rather than on the statistical value of my projections.

STATISTICAL TRENDS PAST AND FUTURE

Several diverse factors interact to create the overall structure of the dairy industry: population trends, consumption patterns and yield per cow.

Population trends

Table 1 and Figure 1 show population trends since 1921. Since an image is worth a thousand words, I will simply say that the last census of 1986 reported a population of 25 309 330 Canadians. What may require a few more words is how I arrived at my projection of the population by year 2001. Based on 1983 estimates, Statistic Canada published a study on estimated population trends to the year 2031. This study provides several different projections based on different fertility rates and immigration levels. However, the lowest projection, which would have given a population of 27.8 million in the year 2001, had already overestimated the actual population of 1986. I therefore decided to take a slightly more conservative estimate.

What is important for the dairy industry is not only the trend in total population but also the demographic structure by age group, since dairy product consumption varies with age (Table 2). In the group aged 0 to 19 years, a peak was reached in 1971 at about 8.5 million (Figure 2). I expect the trend of the last 10 years to continue until 2001, which means an average rate of 1.2 or 1.3 children per family. The second age group is the 20 to 29 years old (Figure 3). For this age group, I believe the peak will be reached between now and 1991, after which a gradual decrease will begin. Note, however, that this decrease is not as rapid as that for the earlier age group. I assume that immigration will have a slight effect on this rate of decrease for this group as well as for the next one.

The third group is aged 30 to 49 years (Figure 4). Obviously, the peak for this group has not yet been reached, but the rate of increase is slowing down. I believe the peak will most likely be reached by the year 2001.

The last group is aged 50 and over (Figure 5). It is assumed that growth will be continuous in this age group, mainly because the peak will not have been reached by the year 2001 and because of the continuous increase in the longevity of Canadians.

These four trends all contribute to an estimated population in the year 2001 of 26.9 million.

Per capita consumption

With this idea of population trends, I would like to address per capita consumption of milk and milk products, looking at the global picture only. For the purpose of this presentation, I take three scenarios. The first one assumes a status quo position based on 1986 per capita consumption of 2.89 hL of milk equivalent. The second scenario is based on a study done for the Dairy Bureau of Canada by Inforesults. The third scenario is my own projection based on personal judgment.

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* Executive Secretary, Dairy Farmers of Canada.

In each scenario, I use the total population estimates described before to project the total consumption of milk and milk products in milk equivalent. I use the years 1976, 1981 and 1986 to illustrate the past trends (Table 3). Over this period of time, we notice an overall decline in the per capita consumption of milk and milk products going from 2.97 hL of milk equivalent in 1976 to 2.89 hL of milk equivalent in 1986. What is noticeable is that the lower rate of increase in population no longer seems to compensate for this decrease in per capita consumption, and thus total consumption has started to decline.

The future trends under the three scenarios are shown in Figure 6 and Table 4. If the per capita consumption is maintained at 2.89 hL, an increase of 6.4% in total requirements can be expected by the year 2001. I am afraid, however, that based on past trend, this does not seem a very realistic scenario. The middle line reflects the second scenario as projected by Inforesults. It assumes a slow rate of decrease in per capita consumption over the next 15 years, going from 2.89 hL in 1986 to 2.86 hL in 1991, 2.79 hL in 1996 and 2.73 hL in the year 2001. This scenario is definitely more realistic but in my view remains optimistic.

What I believe to be more realistic is the third scenario, in which I have assumed an annual decline in total demand of 0.6%, which would bring the per capita consumption to 2.80 hL in 1991, 2.72 hL in 1996 and 2.64 hL in 2001. The aging of the population is by far the most important consideration in this latter projection. While the age group of those under 30 years of age currently represents 47% of the population, under my previous estimates, this age group will only represent around 38% of the population by the year 2001.

Information from several sources indicates that this age group currently has the highest per capita consumption of milk and milk products. Its gradual reduction will therefore impact significantly on the overall demand in years to come. For example, a survey made for the Dairy Bureau of Canada found that the average number of drinks per day of fluid milk products consumed by this age group is more than twice (1.93 drinks per day) the level of consumption for the rest of the population (0.72 drinks per day). Under this scenario, therefore, the dairy industry would see a decline in total demand of more than 2 MhL of milk equivalent between now and the year 2001.

Milk yield per cow

Now that we have a better understanding of the demographic situation and consumption of milk and milk products by year 2001, let us look at how the industry is going to meet that demand. The key factor here is the improvement of milk yield per cow. This is probably the most difficult factor to estimate in view of the current data available. The best estimate we can derive for the average current milk yield per cow is based on total milk production divided by the number of cows as reported by Statistics Canada. I recognize, however, that this figure will tend to be low, as the data for cow numbers will include many cows that are not on commercial farms. Nevertheless, it is as good a base as any from which to project the future trend in milk yield per cow. My estimate in future rate of increase in yield is 1.6% per year, which is the last five-year average increase in yield for cows registered on ROP (Figure 7 and Table 5). As there are now 63% of the cows registered on milk recording programs, I would expect this rate of increase to be close to the norm. In 1986, the milk yield per cow had reached 5060 L per year. Assuming a yearly increase of 1.6%, the average milk yield per cow would reach a level of 6420 L per year in 2001.

The most significant factor likely to influence this rate of increase in milk yield over the next 10 to 15 years is bST or bovine somatotropin. Experts seem to agree that bST should be available commercially in Canada by 1990. The rate of adoption of any new technology, however, is extremely difficult to predict. The most complete economic analysis on the impact of bST on the dairy industry has just been published by the U.S. Department of Agriculture in a report titled "bST and the Dairy Industry." They forecast the impact of bST on milk production per treated cow to be an increase of 13.5%. The impact of this technology on the average yield of the national herd will, of course, depend on its rate of adoption. I have assumed a rate of adoption of 18% in 1991, 55% in 1996 and 70% in 2001. This is a slightly slower rate of adoption than is being projected in the U.S. The use of bST will accelerate the rate of increase in average yield per cow by an incremental 10% by the year 2001. This would provide an average yield per cow of 6945 L per year, compared with 6420 L if bST is not taken into account.

Number of cows

The rest of this analysis is based on my own estimates of consumption trends, and I am assuming the introduction of bST in 1990. Under these assumptions, the fairly rapid decline in the number of cows will continue (Figure 8 and Table 6). In 1976, the census reported 1.98 million cows while 10 years later the number had dropped to 1.44 million, a 27% decrease. The assumptions I use would bring the number of cows in 2001 to 1.02 million, a further 29% reduction.

Number of farms

Figure 9 and Table 7 show the number of milk and cream shippers over the years. The total number of shippers since 1967-68, has shown a continuous decline at an average rate of 5% to 6% per year. While in 1967-68 the number of shippers was more than 174 000, this had dropped to 40 072 shippers in 1986-87. There is no doubt that the decline will continue over time but it is most likely that the rate of decrease will slow down. An exploration of the curve would indicate a further decline in the number of milk and cream shippers of more than 40% before the end of the century. The distribution of shippers between fluid, industrial and cream will be affected differently, however. As the integration of industrial milk shippers continues, the number of fluid milk shippers will continue its slow increase. I expect that by the year 2001, the distinction between fluid and industrial milk shippers will have disappeared. The number of cream shippers will most likely continue its gradual reduction but should reach a plateau before the end of the century. In total, I would expect that by the year 2001, fewer than 23 000 milk and cream shippers would remain in the dairy industry.

Farm size

Given the above projections of numbers of cows and of farms, the estimate in farm size becomes mathematical (Figure 10 and Table 8). Based on available data, the average herd size for commercial farms is currently in the order of 34 milking cows. By the year 2001, this average number of milking animals should reach 45. A summary of all these figures is shown in Table 9.

TECHNOLOGICAL CHANGES IN TODAY'S AND TOMORROW'S DAIRY FARM

My colleague and good friend Wes Lane of the Ontario Milk Marketing Board described last year in his presentation to this Conference on "The Potential Contributon of On-Farm Micro-Computers to Enhanced Dairy Production Competitiveness" a dairy farm in Canada in the year 2000. Although he pointed out that this was not what he perceived to be a "typical" dairy farm, it might be useful to recall his description: "This farm consists of 100 milking cows and replacements housed in a modern free stall facility. Their current herd average is 11 000 litres per cow. The bovine growth hormone is being administered to all cows.... Cows are being milked by a robot while being fed a portion of their own individually formulated total mixed ration.... The milk is automatically weighed and tested for butterfat, protein calcium, total solids, and somatic cell counts and then passed through an ultra-filtration process.... The liquid concentrate is quickly cooled and stored in a bulk tank until picked up by a milk transport later in the week. The amount of milk, its composition, along with the time of milking and amount of feed consumed, is transmitted to the farm computer centre...."

It would be easy for me to agree with Wes's description of a dairy farm in the year 2000 and simply end my presentation at this point. However, I believe that Wes wanted to outline the potential application of known technology on the future dairy farm, be it in the year 2000, 2020 or 2050. While I am convinced the technology he described, and even more, will one day find its place in our dairy operations, I have some doubt that we will be able to find many farms in the year 2000 as completely automated and computerized as just described.

So what will the typical farm look like in the year 2000? Let us first look at what it looks like now. For the purpose of my presentation, I use data from the Ontario Milk Marketing Board 1987 Producer Data Bank Survey. I recognize that there are some regional differences in the dairy farm structure across this country, but this survey of 5533 producers represents the best available data.

Based on these data, I would like to introduce you to Joe, a typical Ontario dairy farmer. Joe is 42 years old and is the single owner of his family farm operation. He has about 250 acres of land and a herd of about 75 animals, mostly purebred Holstein. His cows are kept in a tie stall barn where he milks 36 cows on a daily basis. He has, of course, a milking pipeline system and he could probably milk an additional eight or nine cows with his current system. Although he puts in a good 65 hours of work in his operation every week, he hires some part-time help for the milking chores and harvesting. While Joe does not have a computer yet, he strongly believes in milk recording, feed analysis and ration formulation. He uses artificial insemination for all of his cows. About 95% of Joe's gross farm income originates from his milking operation and the rest from his cash crop enterprise. He is quite proud of his operation and of the fact that he has now close to 75% equity of the market value of his dairy operation. Joe is a bit concerned these days about the free trade issue, but overall looks optimistically at the future.

In trying to describe Joe's farm in 15 years time, I am afraid I must have a second-hand crystal ball because what I see of the typical dairy farm of the year 2000 is somewhat foggy. There are some clear trends, however, that can be identified.

Joe's farm is now incorporated and he operates it in partnership with his son (or daughter). He still uses his tie stall housing and pipeline milking systems, and his feeding system is now computerized. However, his herd has grown and he no longer has excess capacity, and he is seriously considering the free stall system with computerized feeding stations and a milking parlor, which are gaining popularity within the industry. He considers the use of somatotropin to be a standard element of his farm management program, as is his veterinarian-administered herd health program.

Since the elimination several years earlier of problems of data compatibility between the computerized feeding system, feed analysis, the milking system and milk recording, his on-farm computer has come to play a key role in all his management decisions. With the rapid and direct transfer of all his milk testing data and milk recording records to his own computer from the central testing laboratory, he can respond quickly with necessary changes in feeding or other management practices. This is particularly important now that he is paid for his milk on a multiple component pricing system.

His computer has also played a key role in his herd management through his use of computerized heat detection, and he has seen this technology expand the use of AI services in the industry as a whole. Nevertheless he, like so many of his colleagues, is beginning to turn more toward embryo transplant now that embryo sexing is becoming so accurate. Although he is extremely interested in the possible applications of genetically engineered disease-resistant embryos, he recognizes that this technology is far too expensive for him to consider adopting it in the foreseeable future.

These changes may not seem as drastic as one might expect but let us not forget that we are only looking at 13 years down the road. I cannot imagine a rapid integration of several new technologies within this time horizon. Yes, milking robots will be available, but their costs and their reliability will most likely slow down their acceptance by producers. I do not believe that producers will readily accept the idea of letting mechanical equipment, without human supervision, be responsible for their source of income. The human element in maintaining a good and healthy herd will always be indispensable.

Similarly, biotechnology will probably generate practical solutions to many production problems but these will just not be economically feasible for many producers in the next few years. Genetic engineering of high producing cows with disease-resistant characteristics could eventually replace the use of artificial insemination, for example. However, while fast progress is being made in this field, I feel that its commercial viability will likely not be achieved for another 20 years. I do not believe either that concentration and separation of milk components at the farm level will be a viable alternative for several decades. It first requires a heating process to alleviate the parallel concentration of bacteria, which overall would make this concept uneconomical. The same is true of milking systems that would test for fat, protein, lactose, etc. Producers do not need this information on a daily basis and it will remain economical to use the central laboratory of milk recording agencies for a number of years. In fact, I strongly believe that the future is in providing producers more integrated farm management services rather than in expecting internal self-sufficiency for such services within each farm operation.

I do not want to leave the impression that my own outlook of tomorrow's farm is pessimistic, because it is not. There is however nothing magical about the year 2000 other than it is 13 years away. Any technological development that will solve a problem being experienced by producers has a greater chance of being readily accepted. I think, for example, of a foolproof heat detection system integrated to the milking system.

However, you only have to look at the adoption of new technology outside of the farm to have a sense of how producers might react to such changes. Some new technology such as fully computerized home security systems can solve many problems for the homeowner, but they have certainly not been widely adopted as yet, and consumers are cautious about making such a large investment on a system they feel they can perhaps do without. I believe it will be the same at the farm level. However beneficial the new technology might be, producers will not rush into it, particularly if the cost is too high and if they have a system they feel is adequate. The computer market is a good example. In only a few months, your new computer is outdated and unable to run a variety of new programs available, but there is no economic justification to purchase a new one unless you feel that it can considerably improve the applications you make of your computer.

POLITICAL CHANGES

As is clear by now, attempting to predict with accuracy what the dairy industry will be like in the year 2000 is probably as daring as establishing a weather forecast that much in advance; there are just too many unknowns. It is like playing solitaire with half a deck of cards. Future trends will depend on the development of new technologies and the full impact of these technologies will depend on the rate of adoption by producers. This rate of adoption will inevitably be reflective of the economic and political environment in which the producer is operating. Predicting that environment is, in my view, the most difficult task of this presentation.

In addressing the question of political challenges ahead I must, however, be extremely cautious. As a national lobbyist for Canadian milk producers, I am caught between telling you what I think could happen, what I think should happen or what producers, would like to see happening over the next 10 to 15 years. I am, of course, confronted with the possibility that this audience will tell me to go ahead, but will hold everything I say against me. Be that as it may, I will nevertheless stick my neck out and tell you what I personally think might happen over the next 10 to 15 years.

While the obstacles to maintaining supply management seem to increase both in number and importance, I am convinced the system will survive over this period. I believe the long-term dairy policy will also be renewed in 1991 and 1996. But having said this, there will be changes. Probably the most important change I foresee relates to the federal direct payment on industrial milk. There is no doubt that it will not increase and will in fact continue for a number of years to represent a lower and lower proportion of the total industrial milk price. As a result, there will be a point within the next five to ten years where phasing out the subsidy will become a logical approach. I say this because I believe that, when the contribution of the payment to the total price is becoming less significant, producers themselves will want to take the opportunity to eliminate this major source of outside criticism and to reduce the potential for attacks on the supply management program. This does not mean that the Canadian milk producers will easily give up this federal money; rather they would want it to be transferred to other areas such as research, for example.

I also foresee increasing difficulty for the federal government to continue to inject any amount of funds to maintain our offer-to-purchase programs. This shift toward producer funding has already begun. The results of such policy could easily be major changes in what we now know as the Canadian Dairy Commission. If the full administration of the supply management program falls under the financial responsibility of the milk producers, it is to be expected that they will seek greater control over its administration. However, I do not foresee the creation of a national marketing agency similar to those that exist for eggs, chicken and turkey. The Canadian Dairy Commission has certain strengths in its autonomy and legal authority, and these should be preserved in a restructured CDC rather than completely eliminated.

Another major challenge facing the industry is the pressures on the operation of the national plan. With regards to the allocation of Market Share Quota, I remain convinced that the ability of all stakeholders in the dairy industry to reach consensus on critical issue will result in a resolution of the current pressures. The challenge, however, is for the partners of the national plan to become creative an innovative in how to share the national market. As the industry moves toward greater integration of fluid and industrial milk producers and as the distinction of quality is abandoned, it will become increasingly difficult to maintain distinctive policies. Putting aside the historical federal and provincial jurisdiction over these markets, it is conceivable that we could eventually have a more nationalistic approach to milk production whereby quota could move between provinces more freely than it does at this time. I am not necessarily promoting such a move, and I can clearly recognize the market constraints such a move would face, but I point it out because I believe similar concepts will be actively considered and discussed in the years to come in order to maintain the prevailing harmony within the Canadian dairy industry.

One of the most challenging issues within the next five years will be trade agreements. I am talking here of both the impact of the bilateral and the multilateral trade negotiations currently under way. In both cases, the danger of undermining import controls of dairy products will seriously impact on the long-term viability of the milk supply management system.

Any weakening of the import controls – or if you like, the much talked about "underpinnings" of our industry – will reduce the level of our domestic milk production and will thus accelerate the trends in cow numbers and number of shippers I presented earlier. Such effects would only be seen toward the end of the period I have been talking about, but over the longer term would change entirely the political context currently known by the industry. The threat in the course of the GATT negotiations to undermine the right of a government to implement any import control measures in support of supply management is very real. Only time will tell us how serious the federal government will be in confronting this threat and ensuring the viability of our supply management system.

TABLE 1 POPULATION TREND

	Population
1921	8 787 949
1926	–
1931	10 376 786
1936	–
1941	11 506 655
1946	–
1951	14 009 429
1956	16 080 791
1961	18 238 247
1966	20 014 880
1971	21 568 310
1976	22 992 605
1981	24 343 185
1986	25 309 330
1991	26 000 000
1996	26 500 000
2001	26 900 000

Source: Statistics Canada, Census of population.

Of perhaps more importance in this timeframe is the fear that producers have regarding what might happen. Apprehension on their part as to the long-term security of the industry will result in a greater reluctance to invest in new technology, and thus the trade negotiations could actually slow down the rate of change in the industry over 10 years, irrespective of the outcome of the negotiations.

I know I have only dealt with a few elements of policy, but I believe they are the key issues facing our industry. Some other important challenges, such as imitation products and nonstandard dairy products I have left to others to address.

In summary, I am optimistic that, in the face of a declining market, the industry will progress and will become more efficient in the future. However, I do not believe that the changes in the production sector will be as drastic as have often been predicted, and I feel we will be many years into the Twenty-first Century before much of the technology currently being developed is a reality for the majority of dairy farmers.

TABLE 2 POPULATION TRENDS BY AGE GROUPS

	Age group in years			
	0-19	20-29	30-49	50 +
1921	3 827 937	1 401 953	2 253 786	1 304 273
1926	–	–	–	–
1931	4 321 786	1 698 189	2 629 854	1 726 957
1936	–	–	–	–
1941	4 318 586	1 999 416	2 915 091	2 273 562
1946	–	–	–	–
1951	5 308 689	2 219 856	3 655 113	2 825 771
1956	6 387 511	2 327 247	4 234 884	3 131 149
1961	7 624 481	2 392 943	4 677 011	3 543 812
1966	8 429 482	2 703 092	4 874 784	4 007 522
1971	8 495 240	3 473 530	5 070 855	4 528 685
1976	8 241 435	4 126 865	5 477 340	5 146 965
1981	7 795 995	4 521 420	6 262 085	5 763 685
1986	7 316 820	4 594 855	7 142 430	6 255 225
1991	6 800 000	4 600 000	7 750 000	6 850 000
1996	6 275 000	4 550 000	8 100 000	7 575 000
2001	5 750 000	4 400 000	8 200 000	8 550 000

Source: Statistics Canada, Census of population.

TABLE 3 CONSUMPTION OF MILK AND MILK PRODUCTS

	Population	Total consumption	Per capita consumption	Change
	(million)	(kt)	(kg)	(%)
1976	22.99	68.35	2.97	1.27
1981	24.34	73.29	3.01	-4.13
1986	25.31	73.05	2.89	

TABLE 4 PER CAPITA CONSUMPTION OF MILK AND MILK PRODUCTS

	Consumption		
	Status quo	Inforesults	R. Doyle
		(hL)	
1976	2.97	2.97	2.97
1981	3.01	3.01	3.01
1986	2.89	2.89	2.89
1991	2.89	2.86	2.80
1996	2.89	2.79	2.72
2001	2.89	2.73	2.64

* Per capita consumption in terms of milk equivalents at 3.6 kg of butterfat per hectolitre

TABLE 5 AVERAGE YIELD PER COW

	Yield	
	Without bST	With bST
	(L)	
1976	3526	3526
1981	4114	4114
1986	5060	5060
1991	5478	5593
1996	5930	6311
2001	6420	6945

Sources: Statistics Canada, *Livestock Report*, Cat. 23-008 Agriculture Canada, Record of Performance program; U.S. Department of Agriculture, bST and the dairy industry, October 1987.

TABLE 6 MILKING COWS

	Cows
1976	1 979 077
1981	1 779 000
1986	1 443 700
1991	1 303 022
1996	1 141 713
2001	1 021 387

Source: Statistics Canada, Census of agriculture.

TABLE 7 MILK AND CREAM SHIPPERS

	Fluid	Industrial	Cream	Total
1967-68	20 056	65 189	88 894	174 139
	19 402	60 614	73 006	153 022
1969-70	18 938	55 429	62 461	136 828
	18 601	50 080	54 233	122 914
1971-72	18 184	44 034	50 790	113 008
	18 546	41 483	45 439	105 468
1973-74	18 546	38 520	38 246	95 312
	19 353	35 062	29 846	84 261
1975-76	19 221	33 534	27 078	79 833
	20 181	29 773	22 541	72 495
1977-78	20 255	26 989	19 522	66 766
	21 296	23 229	18 065	62 590
1979-80	22 090	19 178	15 102	56 370
	24 151	17 053	14 268	55 472
1981-82	24 660	14 649	13 258	52 567
	24 523	13 688	11 725	49 936
1983-84	24 528	12 610	9 774	46 912
	24 615	11 449	8 565	44 629
1985-86	24 583	10 154	7 588	42 325
	24 466	9 007	6 599	40 072
1990-91	24 400	5 000	3 000	32 400
1995-96	23 000	2 200	1 500	26 700
2000-01	21 000	500	1 200	22 700

TABLE 8 DAIRY FARM SIZE

	Number of dairy cows per farm
1976	24.79
1981	32.07
1986	34.11
1991	40.22
1996	42.76
2001	45.00

TABLE 9 SUMMARY

	1986	2001	Change
			(%)
Consumption (hL)	2.89	2.64	–8.7
Number of cows (million head)	1.44	1.02	–29.3
Yield per cow (L)	5 060	6 945	37.3
Number of farms	42 325	22 700	–46.4
Average farm size (cows)	34	45	32.4

FIGURE 1 TOTAL POPULATION

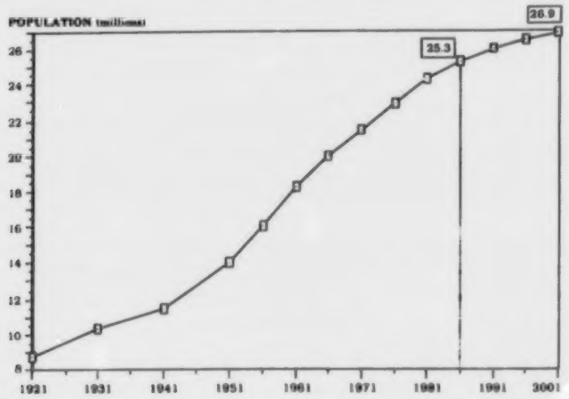


FIGURE 2 POPULATION AGED 0 TO 19 YEARS

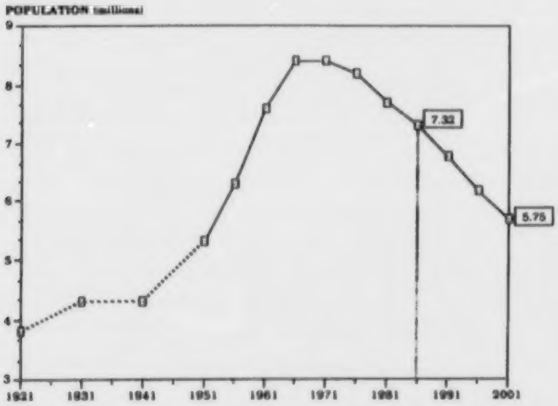


FIGURE 3 POPULATION AGED 20 TO 29 YEARS

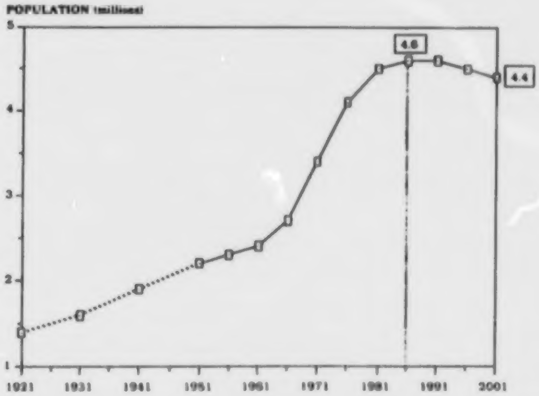


FIGURE 4 POPULATION AGED 30 TO 39 YEARS

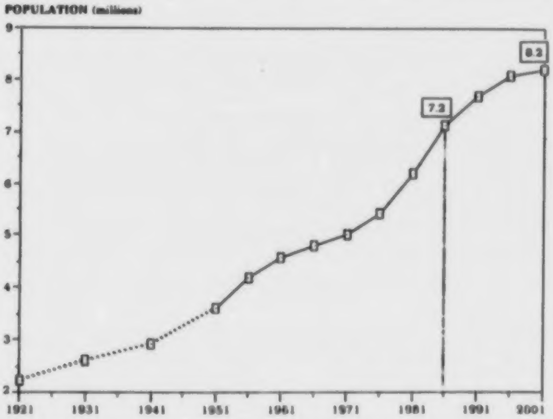


FIGURE 5 POPULATION AGED 50 + YEARS

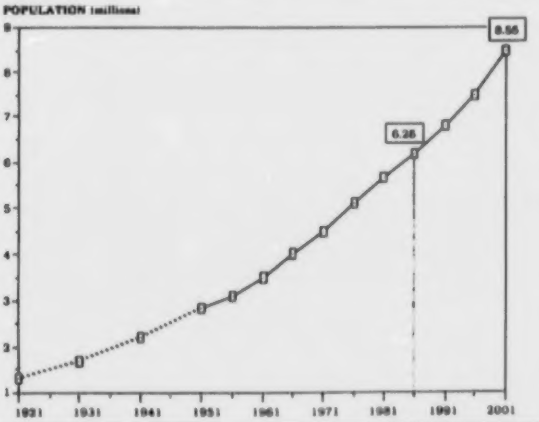


FIGURE 6 PER CAPITA CONSUMPTION OF MILK AND MILK PRODUCTS

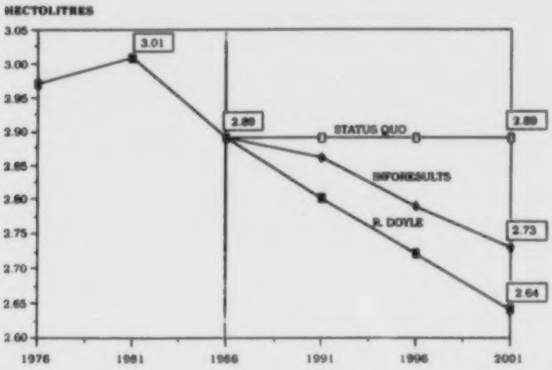


FIGURE 7 AVERAGE YIELD PER COW

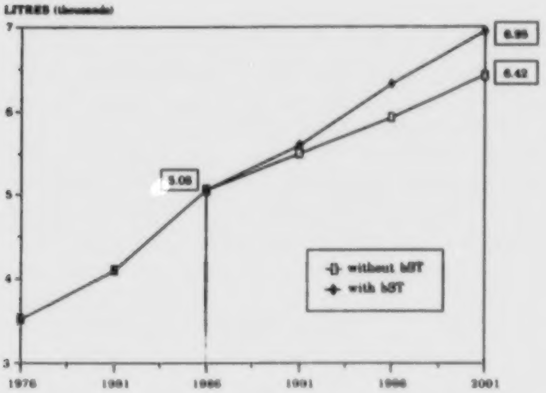


FIGURE 8 MILKING COWS

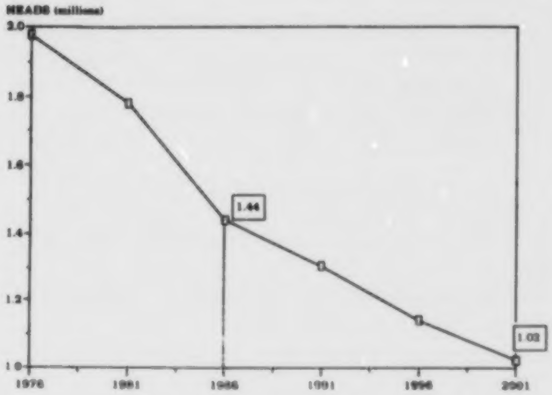


FIGURE 9 MILK AND CREAM SHIPPERS

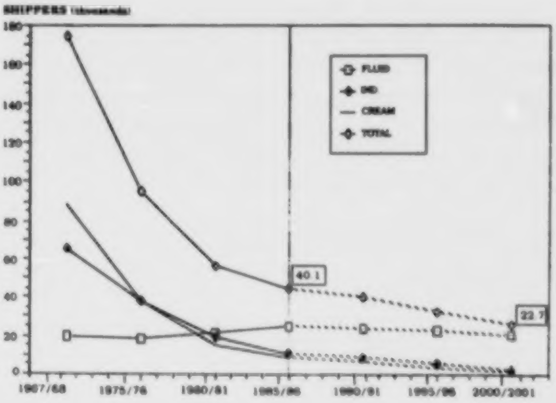
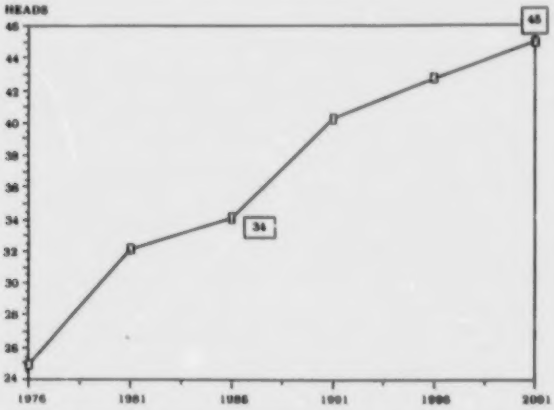


FIGURE 10 DAIRY FARM SIZE



HORTICULTURE AND SPECIAL CROPS

Fruit Production in Canada

*Fred Marshall**

In general, because of the favorable weather conditions in North America this year, production of all fruit crops was favorable. However, the prices in most products were less than satisfactory.

Weather conditions in Europe, especially England and northern parts of the continent, were adverse and production of horticultural crops, especially apples, was substantially less than normal. The marketing prospects, therefore, appear to be favorable for apples in northern Europe and, again, in the Far East.

However, on December 4, Taiwan decided not to issue any further licences to import fruit except from the United States. This will adversely affect our sales to Taiwan.

The canning industry is severely impacted by competition from low-priced Australian imports. This restricts the quantity of fruit we can sell to canners. However, with the generally favorable exchange rate of the Canadian dollar, our export sales should increase.

PRODUCTION TRENDS BY PROVICE

British Columbia

Apple production in B.C. has trended upward through the 1970s reaching a peak of 210 250 t in 1980, and 202 062 t in 1981. From these highs, production has fallen to a low of 129 716 t in 1986. These lower crop volumes in 1984 to 1986 resulted from a succession of weather problems affecting pollination and fruit set, and were not the result of any diminution of crop bearing capacity. This year 1987 saw a return to a more normal crop volume of 161 934 t.

By variety, Red Delicious apples have shown the biggest variation, from a high of 4 316 300 bushels in 1980 do a low of 1 620 000 bushels in 1986 to 3 497 000 bushels in 1987. McIntosh apples have been slightly less variable, from a high of 2 635 556 bushels in 1980, to 1 581 500 bushels in 1986 to 2 104 000 bushels in 1987. Golden Delicious apples have gone from 1 324 610 bushels in 1981 to 639 931 in 1985 and up to 1 108 000 bushels in 1987. Spartan apples have varied from a high of 1 670 217 bushels in 1981 to 950 190 bushels in 1985 to 1 486 500 bushels in 1987.

However, as noted above, these variations in crop volume have been almost totally the result of poor weather conditions at blossom. The past decade has seen extensive replanting of orchards, replacing older, poorly producing orchards with higher-density plantings of improved strains on size-controlling rootstocks. These new plantings provide potential for even greater crop volumes given favorable weather conditions. The trends in apple crop volume in B.C. can be seen in Figure 1.

A study of the potential for apple production in Canada done in 1983-84 reported that the projected potential apple production in B.C. would be approximately 10.4 million bushels, based on trend analysis and changes in bearing potential resulting from replanting activity. If B.C. Tree Fruits' volume is taken to represent 85% of the total B.C. production, then the total B.C. crop in 1987 would be estimated at 10 million bushels. This would indicate that the 1987 crop should be viewed as a "normal" crop volume for the bearing potential in the province.

Ontario

Apple production in Ontario has trended upward as a result of increased planting of newer growth-controlling rootstocks at higher densities per hectare. This replanting activity was stimulated by the government programs in the first half of this decade and can be expected to result in continued increases in production volumes. Apple production in Ontario has not been as variable as in B.C. during the 1980s. The Apple Production Study by Blackburn, Sicotte and Marcoux (Agriculture Canada, 1984) forecast a continued rising trend in Ontario's apple production, and actual crops from 1984 to 1987 would seem to bear out their forecasts. They forecast a crop potential of between 8.8 million and 9.7 million bushels by 1993, given the levels of new plantings in the first half of this decade. While actual crops will be affected by climate and weather conditions during the growing season, there appears to be a strong potential for average crops to be even larger than the record 1980 crop. The challenge then facing the Ontario apple industry will be to have the resources and infrastructure in place to handle such large crops successfully. The trends in apple production in Ontario can be seen in Figure 2.

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* President, B.C. Tree Fruits

An added dimension to the Ontario picture is the possibility that new orchards will be planted where tobacco is now grown. Current government policies toward the tobacco industry are unfavorable to the long-term viability of tobacco growing. It can therefore be expected that tobacco lands will be converted over to different crops, of which tree fruits may be the crop of choice.

Quebec

Up to 1981, Quebec had a fairly constant production of apples, averaging about 5.5 million bushels. Since 1981 however, production has dropped as a result of the winter damage suffered in the 1981-82 winter. In order to help the growers recover from serious damage inflicted by the freeze, the federal and provincial governments provided support for replanting old and damaged orchards. Heavy plantings of young trees in the 1982 to 1984 seasons were made with this assistance. The full effect of which has not yet been felt on production volumes. Crop volumes from 1982 to 1987 have ranged from 3.0 million in 1986 to 4.8 million bushels in 1985 (Figure 3). With the continued maturation of the trees planted in 1982 to 1984, crop volumes can be expected to return to the levels achieved prior to 1981, and the forecast of Blackburn et al for crops of 6.5 million bushels by 1993 may yet be realized.

New Brunswick

Apple production in New Brunswick showed a near steady decline from 1965 to 1981 as a result of a succession of seasons marred by poor weather conditions at bloom, bad growing conditions and winter injury. However, recent trends to replanting orchards at higher tree densities per hectare and the implementation of the New Brunswick Agri-Food Development Strategy, which has targets to increase production through increased yields per hectare and planting of increased hectarage to apples, are expected to reverse the downward trend and to result in increased production through to the next decade. New Brunswick apple production is shown in Figure 4.

Nova Scotia

Apple production in Nova Scotia has increased steadily in the 1972-85 period as a result of increased tree plantings and use of size-controlling rootstocks, giving higher tree densities per hectare. Based on tree renewal continuing as in the past 15 years, Blackburn et al projected a crop potential of 5.0 million bushels, which would be nearly double the crop of 2.8 million bushels harvested in 1987 (Figure 5). Whether such large crops are produced, only time can tell; however, if such a dramatic increase does occur, the challenge to the Nova Scotia fruit industry will be to have the resources in place to handle the product.

Canada

As each of the apple-producing provinces is forecasting increasing crop volumes, it is no surprise that the national outlook is also for a continual increase in the volume of apples produced. From 1965, Canadian apple production has shown an increasing trend, with major fluctuations from year to year resulting from weather conditions. The 1983 study by Blackburn et al forecast the national crop to increase from about 24 million bushels for 1983 to 26.5 million bushels by 1993, or a 10% increase in the national crop. With the wide variation from the average shown in the past, the potential is present for crops even larger than the 1980 record crop of 29 million bushels (Figure 6).

Crops of this size will stretch the resources of the industry to the limit, placing considerable pressure on physical capacity and marketing capability. Producers need to closely examine their requirements for capital expenditures on bins, cold storages, CA storages and packing capacity in order to successfully harvest, store, pack and market these large crops. Larger crops can be marketed successfully if the resources are available to handle the product properly.

Marketing these larger crops will be the major challenge. It is simple economics that increased supply will result in lower prices in the absence of increased demand. Domestically, increased demand can come from increased per capita consumption, or replacement of imports. These projected crops place renewed importance on promotion of apple consumption, specifically consumption of Canadian apples. Expansion of export markets is another fundamental strategy for marketing larger future crops. In the export marketplace, Canadian products have never been more competitive with the present world currency exchange levels. We must seek to take advantage of every opportunity to increase our access to foreign markets, to increase our market share in our existing markets and to continue to promote Canadian apples in our domestic markets.

1987 CROP OUTLOOK

British Columbia

In the West, B.C. has a much larger crop than in the past three years; however, this is a near "normal" volume of the production capability of the province. Quality is good, size very large and storage condition is also felt to be good. The major concern to B.C. producers is the low price levels established by Washington State producers for Red and Golden Delicious apples. Washington has a record crop of 105 million bushels in total, of which 72 million are estimated for fresh market sale. The previous record crop was 1986 with 70 million bushels total and 55 million bushels fresh. The state was caught unprepared for the flood of apples that deluged their plants. They were short of storage, and especially short of bins; however, with the long harvest allowed by the perfect weather, the bin shortage was not as severe as it might have been. Nonetheless, the chaos that resulted caused irreparable damage to the market for Red and Golden Delicious apples in North America and to export markets as well. In Washington, less-than-top-grade Red Delicious apples have been sold for less than the cost of packing them; in one case there, were reports that a Canadian buyer was offered a load of Fancy grade Reds for just the cost of freight from the warehouse in Washington. Top-grade Red Delicious hit a low of $8 to $9 but had recovered to prices of $12 to $13 by the end of November. These disastrous prices for Red Delicious are destabilizing the western Canadian markets and are affecting the prices for other varieties, including McIntosh. B.C. apple producers are facing a very difficult season as a result.

Movement of B.C.'s apple crop has been good to December 1, with heavy export shipments to Europe and the Far East.

Ontario

Crop volume in Ontario is not excessive, with a total volume of 8.15 million bushels. At November 1, storage holdings were normal or average at 4 155 000 bushels, compared with 4 459 000 bushels in 1986 and 3 926 000 bushels in 1985. The 1987 crop was lighter than expected because of poor sizing; however, this has helped maintain some strength in the market. Product quality is generally good, with sound condition and storage life; however, grade out-turn is below normal levels.

Market prices in Ontario are fairly strong, achieving levels similar to those of the 1986 crop and in some cases higher; however, there is some concern whether movement has been adequate. The fresh market has also been buoyed by a strong processing market, which has kept the prices for juice and peeler apples at attractive levels. The outlook for Ontario is fairly good, with prospects for a strengthening McIntosh apple market through the balance of regular storage and into the C.A. marketing season.

Quebec

The 1987 Quebec apple crop surprised many observers by coming well below estimate at 4.0 million bushels. Small fruit size was one factor contributing to the short crop volume. Fruit condition is good, with favorable prospects for a normal storage life. Market prices are generally good, with producer returns in the area of $8 to $9 a bushel, although they are slightly below last years levels. One producing area in particular was affected by drought, resulting in small sizes; however, these are being successfully marketed in cello bags. Fruit quality is normal with no significant problems. Movement to December 1 has been generally good on both the traditional domestic markets and also to export markets, including an entry into the U.K. market. Marketing of the one million bushels of CA-stored fruit should start in mid-January.

New Brunswick

The 1987 New Brunswick crop is estimated at 360 000 bushels, which represents a normal crop volume. Product quality is good, with good grades and size. Movement has been very good to December 1, with strong prices being achieved.

Nova Scotia

The 1987 Nova Scotia crop is estimated at 2.9 million bushels, which is slightly greater than average. Quality is generally good, with good color and good size on most varieties. Storage condition is also good, although there is some concern with a portion of the crop that was harvested late as a result of a shortage of labor. However, most of this product has already been sold, so that remaining stocks are of sound condition. Red Delicious apples, however, suffered from the dry growing conditions and are small with some watercore.

Movement has been fairly good to local markets. The Newfoundland market, however, has been hurt by low-priced American imports. Prices being achieved are below last year's levels but are holding well with the larger crop. Prices for McIntosh apples in cello bags started at $13 to $14 and are now holding at about $11 to $12.

OTHER FRUITS

Peaches

Peaches are produced commercially in Ontario and British Columbia. Both provinces harvested substantially larger crops in 1987 than in 1986, with tonnages being very similar to that for the 1985 crops. In British Columbia, peaches were harvested much earlier than normal as a result of extremely favorable weather conditions throughout the spring and summer growing season. As the peach trees were well rested following the light crop of 1986, the peaches were generally of large size and excellent condition. The larger crop volume put extra pressure on marketing the fruit in western Canada. This was further compounded by very low prices quoted from the United States, including California, Washington and the Carolinas. These imported peaches were generally of small sizes; however, the very low prices depressed the market for all other sizes as well.

The processing sector in British Columbia continues to be extremely weak for peaches. Tonnages sold to canners have dropped dramatically in the past several years to the point where it is less than 25% of the volumes processed previously. This reduction in processed tonnage results in additional volumes being directed to the fresh market, which in most years is already fully supplied.

The Ontario crop was also one of the earliest on record, with crop volumes being about 25% above 1986 levels. The growing season was characterized by a shortage of precipitation and warm, sunny weather. While rainfall was less than normal, it was well spaced and there was little adverse effect from lack of moisture. Irrigation was used extensively. Quality of peaches was excellent, both for fresh market and processing. Tonnage sold to processors was 35% above 1986 levels, and was 5% above 1985 sales.

Pears

The British Columbia crop of Bartlett pears was 95% larger than the 1986 crop and was only slightly less than the 1985 crop. Like all other crops this year, pears matured much earlier than normal as a result of the ideal growing conditions. Both external quality and internal condition were excellent and fruit size tended to the larger counts. The pear market was very competitive this year, with low prices being quoted in California and Washington. Like peaches, the cannery and process market for pears is very weak in B.C. In 1986 no pears were sold to canners. In 1987, cannery sales were less than 50% of the 1985 volume, which in turn was only 50% of the volumes sold to canners at the beginning of this decade.

The Ontario pear crop was also of excellent quality. Total tonnage was down approximately 17%, and fruit sold to processors was down 10% from the large 1986 crop level. The largest decreases were in the Bartlett and Bosc varieties.

Cherries

The sweet cherry crop in British Columbia was 5 000 t, which was two and a half times larger than the rain-shortened crop of 1986 and very similar in volume to the 1985 and 1984 crops. Cherry harvest was seven to ten days earlier than in 1986, the earliest since 1948. The fresh market price structure was determined by Washington State, which had the second largest crop ever. This resulted in a competitive market, with large quantities of imported cherries on the western Canadian markets throughout June and July. While fruit quality was excellent, the marketing conditions resulted in slow movement and some condition problems later in the season. Export shipments were made to both the United States and offshore markets, which augurs well for future seasons.

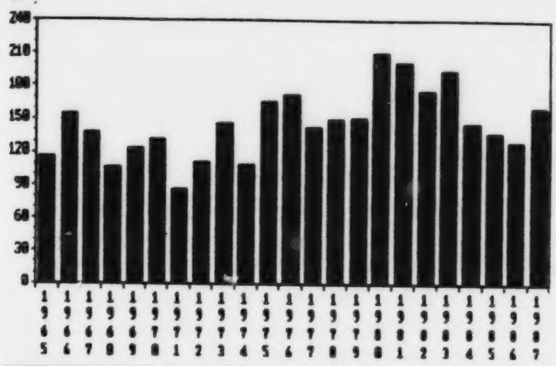
In Ontario, the major cherry crop is sour cherries, and this year saw a very large crop and disastrous prices. The provincial crop was estimated at 10 800 t, of which 6500 t were sold and an estimated surplus of 4300 t was not harvested. The Ontario tart cherry marketing outlook is determined by the U.S. outlook, particularly that of the State of Michigan. In 1987 the USDA estimated the U.S. crop at 165 000 t, up 76% from 1986 levels, of which 140 000 t were estimated for the State of Michigan. This large crop caused a serious oversupply to processors and, combined with a large inventory of frozen product from 1986, resulted in a very much weaker market for tart cherries. As a result of these pressures, the price for Ontario tart cherries dropped fom $0.42 per pound in 1986 to $0.18 per pound, or a decrease of 58%. Tree census figures indicate the 1987 crop was the result of the production of only 65% of the total trees in Ontario, albeit under ideal weather conditions.

General

The outlook for all soft fruit commodities as well as grapes is questionable, given the current discussions of free trade with the United States. The free trade agreement provides no benefits nor advantages for these commodities. Much has been said in the press, both in Ontario and British Columbia, on the negative effects free trade will have on the grape producers. The effects on other soft fruits will be potentially equally damaging, with the elimination of seasonal tariffs, changes to nonstandard container legislation and a possible introduction of consignment selling. These changes will have a direct and significant effect on the future outlook for these commodities, as the U.S. producers are the most important competitive influences on our domestic markets. We will need to examine the final text of the proposed Canada-U.S. Bilateral Trade Agreement closely and to lobby government leaders at both provincial and federal levels to make our concerns known.

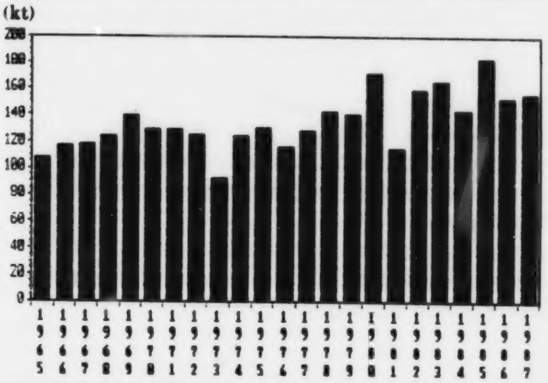
FIGURE 1 APPLE PRODUCTION, BRITISH COLUMBIA, 1965-87

the sales volume



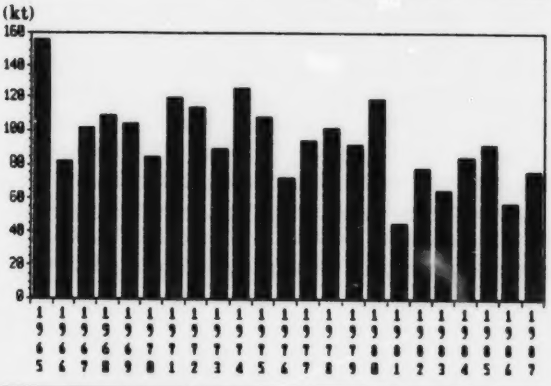
Source: Statistics Canada, 1965-83; B.C. Tree Fruits, 1984-87.

FIGURE 2 APPLE PRODUCTION, ONTARIO, 1965-87



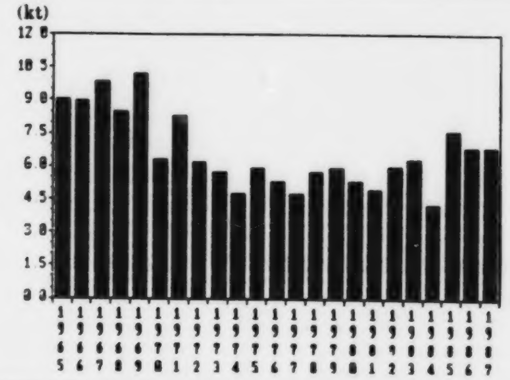
Source: Statistics Canada.

FIGURE 3 APPLE PRODUCTION, QUEBEC, 1965-87



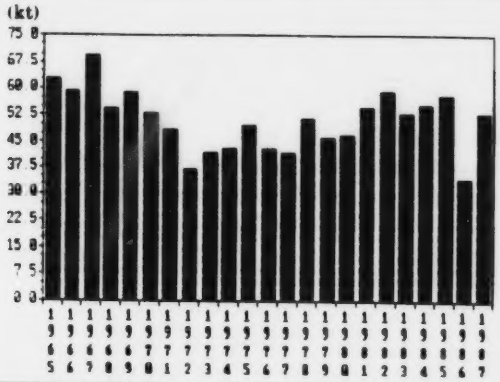
Source: Statistics Canada.

FIGURE 4 APPLE PRODUCTION, NEW BRUNSWICK, 1965-87



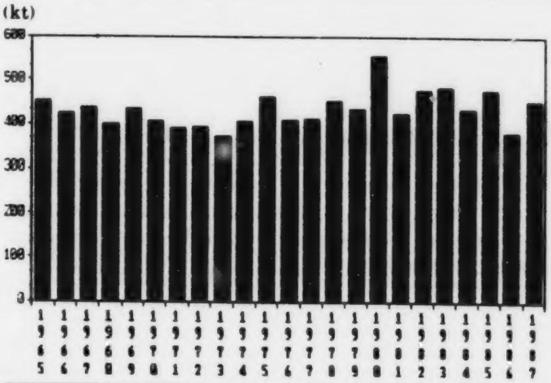
Source: Statistics Canada.

FIGURE 5 APPLE PRODUCTION, NOVA SCOTIA, 1965-87



Source: Statistics Canada.

FIGURE 6 APPLE PRODUCTION, CANADA, 1965-87



Source: Statistics Canada.

Pesticides and the Vegetable Outlook for 1988 and Beyond

albeit under

Michel Legault[*]

FACTORS INFLUENCING THE MARKET

Several factors may influence the vegetable market over the short and medium terms. The free trade agreement is one factor. Transportation costs, labor availability, energy costs, and short-term and long-term borrowing costs are some other factors. Trends are hard to establish because vegetables are produced in great variety and come from different regions of Canada. They may also be grown in either the field or greenhouse.

One factor that in my opinion will have a much greater impact that those I have already mentioned is the availability of products to protect crops, particularly pesticides.

Intensive agricultural practices, the shortage of labor, and increased pest resistance have led to a situation where each vegetable crop is threatened by half a dozen pests. Producers therefore depend on the availability of many different pesticides.

If weeds, insects or foliar diseases are not controlled, yields may fall by as much as 10%, 20%, 50% or even 100%, depending on the pest or crop.

NEW PESTICIDES

Few new products are being registered for crops of minor importance because of the high cost and the risk involved in producing, distributing and registering products having only small sales.

The desire of modern society to minimize water contamination, to keep the environment intact, to protect wildlife and threatened animal species, and to reduce risks for workers, neighbors and families who are exposed to pesticides, and the desire of users to reduce risks to their health will force both federal and provincial authorities to take increasing precautions. For pesticides to be registered, more and more studies will have to be carried out. We can therefore expect the registration of new pesticides to take longer and to become increasingly expensive for manufacturers.

ALTERNATIVE METHODS

What are the chances of developing alternative methods to replace the use of pesticides? We see very few at the present time. The profit motive gave pesticide manufacturers strong incentive to develop and market effective products. In most cases, a person developing an alternative method is not motivated by profit. We therefore have to rely on university or government research money.

In the present context of budget restraint, which seems bound to continue, it is unlikely that the vast amount of money needed to develop alternative methods will become available.

The recent biotechnology breakthroughs could change the situation, but to ensure that the new methods do not threaten public health or the environment more than current methods, we will have to establish a complete registration system. Once this is in place, we will end up with the same dilemma we now have with pesticides. For small-acreage crops, the costs and risks would be too high relative to income potential.

PRODUCTS ALREADY REGISTERED

While the development of new means of pest control holds little promise, the future concerning the continued use of existing products is no rosier. Present pest control is based on the use of pesticides that have been registered for several years. Of the 500 active ingredients employed in Canadian agriculture, only 10% have a data base meeting modern registration requirements. Within a few years, an increasingly stringent data base will be required for all pesticides.

Given the costs of conducting new studies and the existence of market uncertainty, several manufacturers can be expected to abandon the production of currently registered pesticides. How many products will be lost as a result? Since the sales volume is small, there is reason to fear that within the next ten years, between 20% and 50% of registered products used in horticulture will be discontinued. The consequences for the horticulture industry, suppliers and consumers will be considerable.

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[*] Farmer, Past President of the Canadian Horticultural Council, Quebec.

IMPACT ON VEGETABLE GROWERS

The consequences for vegetable growers will vary depending on whether the pesticide withdrawn from the market is replaced or not. We can hope that a substitute product exists. There are strong chances, though, that the substitute product will be more expensive and less effective.

Producers can therefore expect increased costs of production and lower crop yields. They will also have to contemplate the idea of growing a smaller acreage, since pest control is more difficult on large areas than on small areas.

If the production of chemicals is not discontinued too abruptly and if only a few products are lost, the outlook may be good for vegetable producers. The fact that growers produce vegetables without much difficulty has led to a slight overproduction almost every year for most crops. Depending on the supply and demand situation, the surplus production has had a dampening effect on prices. If production difficulties were to reduce supply, producers would generally benefit.

In the United States, it is considered that a 1% reduction in the potato supply causes a 5% increase in potato prices. I have every reason to believe that a similar ratio can be used for vegetables grown here in Canada. But if the loss of essential pesticides makes the production of some vegetables extremely difficult or impossible, the producers concerned will be more adversely affected.

Given the outlays required for vegetable production, some farms may undergo drastic changes.

With the open markets we now have, it is important that the changes in Canada do not precede those in the United States and that all products available in the United States are available in Canada as well.

INTEGRATED PEST MANAGEMENT

As paradoxical as it may seem, one of the consequences of the disappearance of some pesticides will be a reduction in integrated pest management. Integrated pest management in vegetable production is based on the availability of a wealth of different products, which are used only when the pest appears. For example, if the registered product is a preventive and if there is no curative product, the situation is fairly simple for producers. They apply pesticides on a preventive basis at regular intervals to prevent the pest from becoming established. If a curative pesticide exists, the producer can then monitor the progress of the pest and take action only when damage exceeds the economic threshold.

The greater the choice of pesticides, the more a producer can use a specific tool to destroy the pest damaging the crop, without touching other crops or beneficial insects. When these effective specific tools do not exist, the producer has to resort to repeated applications of broad-spectrum pesticides. When there is a decrease in the number of pesticides available, the total volume used increases. The smaller the variety, the higher the concentration of pesticides in our food and the environment.

IMPACT ON PESTICIDE MANUFACTURERS

Chemical manufacturers will witness major changes in their market. Pesticides that are not profitable at the present time may quickly become profitable if competitors withdraw from the market. A company selling a chemical essential for a crop may ask whatever price it wants for the product.

Canadian manufacturers will be confronted with new situations. Products could be deregistered in the United States but retain their registration in Canada. Or registration could be withdrawn for major applications but maintained for minor applications with certain restrictions. Increased pesticide registration requirements could therefore mean new opportunities for aggressive manufacturers.

IMPACT ON CONSUMERS

Consumers will experience the greatest impact as a result of the smaller number of pesticides available. They can therefore expect vegetable quality to decline and should become accustomed to seeing vegetables that are misshapen or that have insect injuries.

Consumers should therefore expect to pay much higher prices for products of lower quality. The price increases will not be about 5%, 10% or 20%, but rather 100%, 200% or 500%, depending on how difficult it is to produce a crop with fewer pesticides. For several years consumers have benefited from economical prices resulting from overabundant supply.

For short periods, consumers have paid $2 or $3 for a head of lettuce and $1 a pound for onions or carrots. These situations will become more and more frequent as production difficulties increase. It should be realized that yield reductions of 20%, 30% or 40% are commonplace in horticultural production. Individual producers are used to these fluctuations. Consumers are affected when these yield reductions occur in one or more regions.

With a ratio of 1:5, a simple 20% decline in supply would bring about a 100% price increase.

Consumers must understand the costs of obtaining pesticide-free foods. There is no doubt that the use of manufactured chemicals presents certain risks. Nevertheless, no pesticide that presents a cancer risk of more than 1:1 000 000 is registered. Given that over a lifetime an individual has 1:4 chance of contracting some form of cancer, pesticide registration criteria are clearly very stringent. If one considers only the risk, it is obvious that any risk, no matter how small, must be eliminated. But consumers should also look at the other side of the coin. They must evaluate not only the risks but also the benefits involved in using pesticides. To date the groups concerned with health and environment protection have successfully identified the risks involved. Someone out there should also identify the benefits, so that governments can make valid risk/benefit decisions in the interests of consumers.

CONCLUSION

Pesticide use is a highly controversial and extremely complex subject. You will note that the hypotheses I have put forward are not supported by figures or irrefutable facts. The situation is perhaps not as dramatic as I have indicated. But could it not also be worse? I would like Agriculture Canada to carry out a comprehensive study of the situation. The stakes are too high to take a wait-and-see approach.

Western Canada's Pulse Situation and Future Prospects

Don Tait[*]

The following is a brief review of the organizations representing pulse growers in western Canada:

- The Saskatchewan Pulse Crop Development Board is a producer organization supported by a mandatory check-off, which is used for research and promotion.
- Pulse Growers Association of Alberta is a producer organization supported by voluntary memberships.
- Manitoba Pulse Growers Association is a producer organization supported by voluntary memberships.

  (All three of these organizations have representatives from research and from the trade.)
- The Western Canada Pulse Growers Association is an umbrella organization that represents the three provincial groups and is funded by them.

Pulses are the edible seeds of leguminous crops. The main pulse crops in western Canada are lentils, peas, field beans and fababeans.

LENTILS

There was a dramatic increase in the lentil acreage in 1987. It is estimated to be up to 600 000 acres, with Saskatchewan having 500 000, Alberta 40 000, and Manitoba 60 000. Production, assuming an average yield of 1100 pounds per acre, would total about 299 000 t. Compare this with the 1986 situation when acreage was about 331 000 acres and production was 182 000 t. Quality is reasonably good, with about 65% expected to grade No. 1 or No. 2.

Prices are poor compared with those in 1986. Growers with contracts will get up to 18 cents per pound for the first 500 to 600 pounds per acre with the balance at market. This would be the best of the contracts. About one half of the lentils are estimated to be under contract.

Open market prices to growers for the variety "Laird" at present are 10 cents per pound for No. 1 and 8 cents per pound for No. 2. Anything lower will go as feed at 7-8 cents per pound, compared wih prices in 1986 when No. 1 "Laird" prices were as high as 30 cents per pound or more. About 80% of the acreage is "Laird" with the balance in "Eston" and common "Chilean" varieties.

We have a situation where the spread between No. 1 grade and feed is 2-3 cents per pound. This means that everything below No. 2 and possibly even some No. 2 will be sold as feed; extra No. 3, No. 3 and sample grades do not exist for all practical purposes. It then becomes very important to know just how much of the crop is in the top two grades. If 35% is below No. 2 and is sold as feed, this leaves a lot less to market for human consumption.

Export movement was good early in the fall when the trade was filling the orders that had been placed last winter and early spring. Now movement is very slow. The buyers know there is no shortage, so they appear to be buying only for immediate requirements.

Comparing this with the situation last year, in 1985 there was a short crop, so by the time the 1986 crop was harvested the pipeline was empty and buyers wanted lentils now! They placed orders to fill most of their requirements in the late fall and early winter, but the trade was filling orders with 1986 crop until June or July. There was a carry-over into the 1987 crop year, probably the first time ever for Canadian lentils. The U.S. and Turkey, the other main exporters of lentils in the world, had good crops. Therefore, the world surplus was approximately equal to our supply of No. 1 and No. 2 grades.

The U.S. is using the Target Export Assistance Program to promote their product overseas, with $2.5 million spent in 1986, $2.5 million in 1987, and likely another $2.5 million in 1988. They do TV and newspaper ads, in-store promotions, and they try to get consumer loyalty for U.S. peas and lentils. We are sure they are having some success.

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[*] President, Western Pulse Growers Association.

The bright side is that India has lowered the tariff on pulses, and both India and North Africa need pulses. With the price of lentils very cheap for the buyers, we hope that markets will expand. Prices have not been this low since the early 1970s.

There is a feed market developing for lentils overseas. With prices as high as 8 cents per pound offered to the growers, this should take care of the low grade lentils and possibly even some of the No. 2 grade.

Outlook for 1988

Obviously there will be a carry-over of lentils in Canada. If the feed market takes all of the lower grades and the low prices for No. 1 and No. 2 grades causes the market to expand, we could be left with 50 000 t minimum carry-over, and that is just a wild estimate.

Seeded acres in 1988

There are two scenarios. The first one is that with low prices, a lot of growers will get out of production and acreage will drop, possibly by 25% to 30%. The second theory, which I subscribe to, is that acres will remain about the same. The reasons for this are: poor prices for other crops; lower input prices than last year, with lots of relatively low-priced seed available; and this year's situation in which growers had larger acreages, not necessarily just more growers. Speculation is that prices for contracts for 1988 will be in the range of 11-12 cents per pound for the first 360 pounds.

There will be up to 600 000 acres again in 1988, unless deliveries of this crop are so poor that there are large amounts in the producers bins come spring. Prices will remain low, unless other exporting countries have poor crops.

There will be up to 600 000 acres again in 1988, unless deliveries of this crop are so poor that there are large amounts in the producers bins come spring. Prices will remain low, unless other exporting countries have poor crops.

PEAS

Acreage increased in western Canada to 660 000 in 1987. This consists of 180 000 in Manitoba, 380 000 in Saskatchewan and 100 000 in Alberta. Assuming a yield of 25 bushels per acre, this would be production of 450 000 t. This compares with 306 000 acres and production of 223 500 t in 1986.

The prices for peas are not high but, compared with those for other crops, they are quite good. Feed peas are holding up the market, with prices from $4.75 to $5.00 and more per bushel. This is usually delivered to an elevator or loaded in a hopper car with maximum FM of 8%. These peas are shipped in bulk without cleaning or bagging.

The main market for feed peas is to Europe, and we have competition from Australia.

The price in the food market is slightly higher, but very little volume is moving. The spread in price is not enough to pay for cleaning and bagging.

Of the total acres, anywhere from 50 000 to 100 000 acres were in green peas. These are a dry green pea and acreages have increased in the last two or three years. They are usually American varieties not registered in Canada such as Princess TM or Alaska 81. No adapted Canadian varieties are available. Markets for good-quality green peas are large in comparison with those for yellow peas. The problem is that good-quality greens are hard to obtain, so where can you sell the low grades? Luckily the feed market is happily accepting low grades or bleached green peas.

Most if not all of the green and yellow peas should move into the export market, but prices may not hold at present levels. A large amount will be required for next year's seed and with traditional markets and large feed sales, most of the peas from western Canada will be cleaned out.

Outlook for 1988

Acreage will increase to at least 1 000 000, with a possibility of 1 500 000. A lot of these acres will be for feed peas. Seed demand will be high, especially for the Canadian variety "Tara," which has excellent yields and is suited for the feed market.

Prices will likely be lower as a result of competition from Australia. The feed market will continue to be the floor price for peas (and probably for other pulses). This feed market appears to be long term but must be competitive in price with U.S. soybeans, Australian peas and lupins, even rape meal or sunflower meal.

FABABEANS

Acreage is low in comparison with that for other pulses. We are looking at about 26 000 acres in western Canada, with Manitoba at 15 000, Alberta at 4 000 and Saskatchewan at 7 000.

With yields at about 1 t per acre, this would give production of 26 000 t. We can compare this with 21 000 acres in 1986. Acreage is up in Manitoba and Saskatchewan and down in Alberta.

Prices started as low as 6 cents per pound to the growers, rising to 9 cents per pound or better for No. 2 grade and then falling to 7.5-8 cents per pound.

Fababeans have not seen the increase in acreage that has occurred with peas and lentils. They require a lot of moisture and a long growing season. They are only suitable for a small part of the area in western Canada.

Outlook for 1988

There is not expected to be any dramatic increase in acreage because of price and the limited areas suitable to grow them. Look for an increase in Saskatchewan where there appears to be some interest; however, this may be held down by a shortage of suitable seed. Acreage could increase in a few years when there is sufficient seed of the new variety "Orion," which is higher yielding and earlier maturing than present varieties. "Orion" has just been registered, and it will be a few years before sufficient seed is available.

FIELD BEANS

Alberta

Acreage in Alberta is expected to be 21 000 acres up from 12 000 acres in 1986. "Great Northern," "Pink," "Pinto" and "Red Mexican" varieties are grown. Average yield is approximately 1600 pounds per acre. Virtually all of these are grown in southern Alberta under irrigation and are contracted to the Alberta Wheat Pool. The Alberta Wheat Pool have increased its processing facilities in order to handle the increased acreage. Growers are paid on a pooling basis, and initial prices are 14.5-16.5 cents per pound.

Saskatchewan

Acreage in Saskatchewan will possibly be 100 to 200 acres; part of this will be under irrigation at Outlook. Saskatchewan is looking for suitable adapted varieties and needs early-maturing colored beans. Lack of processing plant means a long haul for Saskatchewan beans to Alberta or Manitoba.

Manitoba

Acreage in Manitoba is expected to be about 25 000 acres, up from 15 000 acres in 1986. Virtually all of these are grown on dryland and mostly noncontract. One half of the acres are small white pea beans with the balance "Pinto," black, and some dark red kidney.

Yields were variable from less than 1000 pounds per acre to 2700 pounds per acre. Average is about 1300 pounds. Prices to growers range from 13-14 cents per pound on whites to 18 cents per pound on blacks and "Pinto."

Good crops in Michigan and Ontario are providing strong competition for the white beans, and there will likely be some carry-over. This compares with the situation in 1986 when the white bean growers did very well because of poor crops in Ontario and Michigan.

Outlook for 1988

Alberta will probably sell most of its production and, if this is the case, seeded acres will remain about the same.

Saskatchewan's acreage may increase slightly as more growers experiment with small acreages.

Manitoba acreage will drop and the reduction will be mainly due to new growers in 1987 who will go out of production. Seeded acres could go back to 1986 levels.

If production stays up in other areas, the prices will remain low.

Tripartite stabilization for beans will come into effect for the 1987 crop. Ontario and Alberta have joined the plan and the Saskatchewan government has said it would join when acreages warrant it in the future. The Manitoba government has refused to join, although the growers favor the plan. Stabilization could affect production in the future as the beans will be grown where there is some price stability. An indication of this is in Alberta where Alberta Agriculture reports that, to the best of its knowledge, every grower except one has signed.

RESEARCH

Research has played a large part in the increase in pulse acres; take for example lentils. "Laird," "Eston," and "Indian Head" are all recent lentil varieties developed in Canada. "Laird" lentils are one of the main reasons that we are doing so well in the export market. They are large seeded, high yielding and well adapted over a large part of the growing area. They are well accepted by the export trade. "Estons" are finding a small but steady market. "Indian Head" lentils could be very significant as a green manure or cover crop to replace summerfallow. There could be a modest acreage to supply seed for western Canada and possibly to the United States.

"Tara" pea is a Canadian variety that is well adapted over a large area and is high yielding. This variety could take over a large part of the acreage devoted to feed peas.

What is to come in research?

First in lentils: medium-sized red lentil could be ready in about three years. Possibly we could service the ethnic markets in Canada that now uses red Turkish lentils. It is also possible we could market them in the U.S. and overseas if they are price competitive. Later on we could move "Laird" and "Eston" type lentils that are tolerant of MCPA, and this would lower input costs for chemicals. Also we could have a lentil that is resistant to ascochyta.

As for field beans, we could have an upright bean that could be straight combined. In peas, we could have a Canadian variety of green peas in three or four years.

With regard to fababeans, work is progressing on white-flowered fababeans. The white-flowered fababean has less tanin in the seed coat. It also has less growth inhibitors. This means it could possibly be substituted wholly for other sources of protein in livestock feed rations. At present, use of fababeans in livestock feed is restricted to a small percentage because of tanins and growth inhibitors. If a fababean of this type could be developed with a high yield and reasonably short growing season, it could take over a lot of acres in the moist areas of western Canada for livestock feed purposes.

SUMMARY

In 1987, we had a large increase in pulse production in western Canada. This coupled with good crops in the U.S. and other parts of the world means oversupply and generally low prices.

The only bright spot is the market in Europe for feed peas and lentils. This market will depend on conditions remaining the same where the EEC subsidies favor wheat and oilseeds over pulses. It will also depend on competition from Australian peas and lupins and from U.S. soybean meal.

For 1988, the low prices and reduced delivery opportunities for cereals mean that the pulse acreage will continue high. It will remain more or less constant in lentils and beans and will increase substantially in peas. So unless there are poor crops in other countries, we will be looking at large acreages and low prices for next year and beyond.

TABLE 1 WORLD GREEN LENTIL SUPPLY

	Volume (t)
United States	107 000
Turkey	130 000
Canada	225 000
Argentina	5 000
Chile	25 000
Spain	60 000
Total supply available for export	552 000

TABLE 2 WORLD GREEN LENTIL DEMAND

	Volume (t)
Europe	120 000
South America	50 000
North America	22 000
Middle East	31 000
North Africa	37 000
Pipeline (in transit)	35 000
Total demand	295 000
Excess supply over demand	257 000

Source: Estimates supplied by trade sources for Greg Simpson presentation to Alternate crops conference, Lethbridge, November 1987.

Forages and Their Future Prospects

*J.E. Winch**

INTRODUCTION

Agriculturally, forage is associated with ruminant livestock: no livestock, no forage.

Tied to livestock therefore, the fortunes of forages followed those of the livestock and, like the tides of the Bay of Fundy, ebbed and flowed. Thirty to forty years ago, livestock was "agriculture" and forage was the feed. In the 1960s and 1970s, energy was cheap. Farming systems changed, feed lots appeared, and stored feed was the vogue. Investments skyrocketed. Cash cropping and monoculture were the "in things." Forage was labeled "obsolete." "Tight" money and interest rates soon followed and forced many adjustments. Livestock numbers and livestock systems changed markedly. The continuous cropping led to soil degradation. This has led to a renewed look at forage. There is a resurgence in the importance of the crop and a "return" to a sustainable agriculture (Clark and Christie 1987).

Throughout this, however, forage was and is even now considered to be no more than a cheaper source of roughage: necessary but not key to efficient production. This coupled with the fact that it is a "soft cash" crop has been instrumental in the development of a "second crop" attitude toward forages: other crops are required to "put milk into the pail and beef on the back" or "I cannot make money from this crop."

In addition to the role that forage has played in the field of livestock production, it has a very important role for erosion control and soil improvement in "hard cash" cropping. As well, forages have been used outside agriculture in the field of environment. They are considered to be a very key part of programs for the stabilization of creek, stream and river banks, for wind and water erosion on roads and highways and for hydro corridors. Their use is mandatory in the rehabilitation of land that has been disturbed by deep rock and surface mining.

There are tremendous challenges for the use of forage crops in agriculture and in the field of environmental protection. Farming systems are changing. Environmentalists are demanding clean water, air and the protection of our soils. Can the forage crop measure up to these demands?

The purpose of this paper is to examine the status of forage in agriculture and in the environmental field with a view toward estimating its future prospects.

LAND USE IN CANADA

For the purposes of this paper and to put forages in the proper perspective, a forage crop is defined as any annual, biennial, or perennial herbacious species that is grown or used for livestock feed, for soil improvement, for erosion control or for esthetic purposes. This definition broadens the concept of forage beyond that of being solely a livestock feed as implied by the definition of Waldron (1983) and focuses attention on the other uses to which forages are being used.

Although Canada has a large land area (second only to the USSR), only 8% or 73 000 ha are suitable for agriculture use (Table 1). With the exception of the wild land (tundra, etc.), forestry dominates the use of land in Canada. The urban use of land (highways, houses, towns, etc.) occupy only 1% of the total land area (921 800 000 ha). For the most part, 80% of the agriculture land is located with 200 miles of the U.S. border.

The soils of these lands are covered with a mosiac of herbacious species that are used as forages; they are mostly grasses. In the wild land, the species are utilized by nomadic herds of wild animals. Similarly in the forest areas, shade-tolerant grasses offer a source of feed for wild and in some cases domesticated animals grazing the upland ranges in mountain areas. The most intensive use of forage remains in agriculture and in urban areas. Within the wild, forest and agriculture areas, however, there are in some cases large areas of disturbed land: i.e., the tar sand of northern Alberta, coal deposits in Saskatchewan and British Columbia and Nova Scotia, and gravel pits and quarries in most provinces of Canada.

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* Forage Consultant, Canadian Forages Council

FORAGES IN AGRICULTURE

The amount of all the land in farms (improved and not improved) that is devoted to forage is larger than any one single crop and is equivalent to the total of all the grain crops. However, where only improved land is concerned, forage is second to wheat, 30% compared with 21%, (Table 2), but is greater than that for all other grain crops combined (Table 3). Thus forages occupy a major proportion of the land devoted to agriculture.

The predominant use of forage in Canada is for pasture (75%). The improved pasture usually found on the tillable land of the farm (classes 1, 2 or 3) is a small proportion of the total pasture used in Canada. This type of pasture has been for the most part associated with milk production herds. In contrast, the major land area devoted to pasture is that associated with land classes 3, 4 and 5, which has not been improved and which relies on indigenous grass species for grazing. Much of the unimproved pasture is located in the ranges of Alberta and Saskatchewan, although considerable unimproved pastures exist in the mountain ranges of British Columbia, Manitoba, Ontario, Quebec and the Maritime provinces. The production is low, particularly on the ranges of western Canada (Nickel and Pringle 1981; Smoliak and Wilson 1981) and in Ontario (Winch 1981b). For the most part, the unimproved pastures are used as summer feed for the beef cow-calf herds and the stocker industries of these provinces.

The amount of land devoted to forage has not remained static over the years. Indeed, the total number of hectares of forage was 38% lower in 1986 than in 1971 (Table 4). This reduction suggests that forages have become less important. This is true in some areas of Canada such as in southern western Ontario where the "hard cash" crops of corn and soybeans replaced the traditional livestock farming systems. But more importantly, these reductions reflect the changes that have occurred in livestock farming systems and the increases that have occurred in the yield quality of forages that have taken place over the last few years (Clark and Christie 1987; Winch 1981b).

The use of hay increased marginally from 1971 to 1981 and again from 1981 to 1986 (Table 4). Over the intervening years, the yield and the quality of the hay and/or silage increased from an estimated 4.2 t/ha to 11.2 t/ha as a result of the use of improved technology. The potential has not been reached (Nickel and Pringle 1981; Winch 1981b). In contrast, the area of improved and unimproved pasture decreased by 20% and 21% from 1981 to 1986. From 1971 to 1981, however, losses occurred only in unimproved pastures. There was an increase in the amount of improved pasture during this time.

These changes indicate for the most part a shift in the farming systems, feeding practices and livestock numbers. With dairy, there has been a steady decline in the number of milking cows (Winch 1987a). As well in Ontario and to some extent in Quebec and British Columbia, there has been a steady trend away from the use of pasture and toward the greater use of stored feed in confined feeding units. These changes contributed to the reduction in improved pasture and toward the increase in the stored feed. Within the beef industry, a reduction in cow numbers in the western provinces from 1971 to 1981 (not heifers, steers and calves) has been related to the reduction in the area devoted to this type of pasture/range. In contrast, between 1981 and 1986, there was a reduction in all types of beef cattle. This was for the most part responsible for the marked reduction in both the improved and unimproved pastures in Canada.

A major problem confronting forages is that it is a "soft cash" crop. It is in the main a crop that is fed to livestock and as such contributes to livestock production. Little hard cash is realized. The only cash income is from the sale of hay and forage seed. The sale of hay may occur on the farm, but the production and sale of forage seed is a specialized industry and few farmers are engaged in this industry. Because of this, it is difficult to estimate the value of forages, which in turn has contributed to the attitude that it is a "second crop."

Attempts have been made to estimate the value of the forage crop (Bradvold 1969; Nickel and Pringle 1981; Winch 1981b). The value of the hay was estimated by Benoit (1969) at $2 billion in 1981 but, because the yield of pasture and its value cannot be determined with any degree of accuracy, the total value of the crop, although often estimated, is very difficult to determine. Smoliak and Johnston (1981) estimated the yield of forage from the native ranges in western Canada. These values were used by Bradvold (1969) to estimate the value of forage in Canada. Nickel and Pringle (1981) calculated the feed requirements of an animal unit (374 kg per 1000 pounds) as 6.120 t per year. For the purpose of this article, the value of the forage crop in Canada was determined using the number of animal units (ruminants) in Canada, the feed requirement calculation of 6.120 t and a value of $60/t of hay. The value of hay was $4.031 billion for the year 1986 (Table 5). This value is about 45% of that of all other crops produced in Canada and is much higher than the value of wheat, and all grain crops, the crops which are considered commodities.

Despite the fact that forage is the most valuable crop in Canada, it does not have the backing in terms of research personnel that other crop commodities have. For example, the number of professional person-years devoted to forage crop research in Agriculture Canada, in provincial ministries and in universities was 134 and those engaged in cereals was 272.9 (Saidak n.d; Winch 1981b). The values of the crops were $4.0 billion and $2.4 billion, respectively. In other words, there were twice the number of professionals engaged in research in cereals, which have half the total value of forages. Even if the total number of professional person-years has not changed, the direction of forage crop research appears to have changed dramatically. This is particularly noticeable at the university level where grants in aid of research are required to conduct research. Grants are solicited from industry and government. As a result, the direction of research is governed by the grant. This change is in part evidenced by the number of research grants awarded to university faculty for applied research, which in 1986 amounted to only 10% of the total granted.

Support, however, in terms of provincial and/or regional research extension committees do exist across the country. Also an Expert Committee on Forage Crops does meet yearly to deal with matter concerned with forage. Both of these committee structure however are not "producer driven." Thus there is no one structure that speaks for forage across Canada or represents the producers' interest in Canada.

FORAGES IN EROSION, ESTHETICS AND REHABILITATION

The World Conservation Strategy, a United Nations plan for sustainable development, has made inroads into Canada. The National Agriculture Strategy of Canada calls for the protection of soil and water resources and strongly recommends that all provinces develop strategies that involve the cooperation among all segments of industry, farmers, processors, suppliers, retailers and consumers. Prince Edward Island, one of the seven provinces actively engaged in developing policies, examined its particular areas of concern and recommended the adoption of a policy "of not permitting any vulnerable surface to be left uncovered over winter" (Winch 1987b). In Saskatchewan, a three-year $500 000 soil conservation program has been established. As well, government and industrial program policies and guidelines have been developed for the rehabilitation of hard rock and surface mines (Mountain 1983; Pelva 1983), electrical transmission lines (Horsley 1983, highways (Russel 1986) and pipelines (Sims, Powter and Campbell 1984).

The guidelines for the control of erosion and rehabilitation of disturbed lands all include the use of forage, and detailed outlines have been prepared for their establishment and maintenance.

The amount of land involved in this area is large and includes that concerned with transportation, mining, energy and urban (Table 6).

No estimates of the value of the forages in these reclamation programs have been made. However, using an average cost for preparation, seed, fertilizer and seeding of mine tailing pits of $1200, the value of rehabilitating the areas involved in transportation, mining energy and protected lands would be $4.81 billion.

In addition, grasses are used to beautify homes and to provide fairways on golf courses and play areas in municipal, provincial and federal parks (Table 6.) In Ontario alone, there were 153 990 ha of grass, which had a reported value of about $224 million. The which had a reported value of about $224 million. The Ontario value is approximately 55% of the 1986 total value of the urban use of forages for Canada of $447 million (Sears and Gimplej 1984).

The estimated total value of forages for special uses therefore would appear to be well over $5 billion dollars.

Only a limited amount of research has been conducted on rehabilitation of such disturbed lands. Some university research in this area has been funded by the federal departments of Environment and Natural Resources. Much of the needed research and development has been conducted by the industries involved (Inco, Noranda). Recently, considerable effort has been made by Agriculture Canada and its provincial counterparts to assist in the implementation of erosion control methods in farming, in ditch banks and on the Great Lakes shorelines.

FUTURE PROSPECTS

The acceptance of the broadened definition of a forage crop not only brings into focus the use of forages in areas of environmental concern but also points out dramatically that forages are a key crop to agriculture and to society as a whole, a crop that should lead to the improvement of the quality of life for all Canadians.

The major problems have been that it has been a "soft cash" crop. This in turn has caused its status to be somewhat below what it deserves. Efforts must be made to overcome this attitude in order for it to achieve its full potential.

However, agriculturally and environmentally, forages do have an excellent potential and should play a very influential role throughout the remainder of the decade and well into the next.

Hard cash will be realized through the sale of seed and hay on the export market as well as on the domestic market.

Forage seed production has become a specialized farming operation and has been profitable for producers. This has been due in part to the development of rules and regulations for production by the Canadian Seed Growers' Association and grading system by Agriculture Canada. In 1986, some 29 770 000 kg of forage seed was produced in Canada and 26 609 545 kg was exported. This export market developed for the most part on the fact that Canadian seed was high in quality. In contrast, hay sales are not regulated nor is hay graded, even though there is a Hay and Straw Act. Up to this point, however, hay grades have not been a major deterrent for its sale. In the future, however, the sale of hay to the United States may have to be graded. The system adopted in Canada should accommodate the standards being developed in the United States. As well it will be necessary to have a rapid method of quality analysis.

The low-cost production of forage, particularly that of pasture, will make forage use in rations for livestock an attractive alternative to other more expensive feed crops in this period when "low input" is essential for profit, especially in beef cattle production (Clark and Christie 1987). The potential for higher yield and for higher-quality feed will be a bonus in the development of least-cost rations for dairy and for the finishing of beef in the feed lot. Alternatively and perhaps more economically, the use of pasture growing, fattening and finishing beef will no doubt occur. Research has shown that it can be done economically (Clark and Christie 1987). With the advent of free trade, it is envisaged that an increase in the amount of forage seeded in the western provinces will be needed to accommodate the increases anticipated in the beef export trade.

In addition, considerably more forages will be grown in cash crop rotations. This has begun. In 1986, over 2 million pounds of red clover was sold in Ontario for use as a plow down on the heavy clay soils.

Forages will make a tremendous impact in the field of environmental protection. The public is demanding that the environment be protected and is turning its attention to those who cause the problems. Forages will play a very large part of this protection. They have the ability to improve the physical and chemical condition of soils, to prevent wind and water erosion not only on agricultural soils but also on creek and river banks, bluffs and shore lines, and to stabilize, rehabilitate or recycle land disturbed by surface mining (pits, quarries and coal), deep rock mine tailing pits and transmission corridors (gas, petrol and electric lines, roads and highways).

The bright future predicted for forage, however, lies not only with the potential of the crop but also with a determined effort to improve the image, to promote and to assist and insist on government policies that will benefit the crop and the producers across Canada. This will be achieved if there is a body of dedicated persons who will undertake the task of looking after and being a spokesperson for the industry. The formation of such an association was suggested by a number of speakers at the National Forage Symposium held in Ottawa in 1981.

The Canadian Forage Council is in the process of being formed. Its purpose will be to provide a unified and strong voice representing the national view of producers and allied trades for forage crops. The objectives will be to provide a forum, to promote the advancement and use of forage, to collect and disseminate information, to cooperate with other organizations, to participate in international forage activities and to encourage producer activities through provincial councils. Provincial bodies have been formed.

The national body consisting of members from each provincial body will meet in March 1988 to elect the executive and to deliberate on issues.

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TABLE 1 MAJOR LAND USES IN CANADA

	Area	Proportion
		(%)
Total area	997 316	
Fresh water	75 516	
Total land area	921 800 000	
Forestry	341 700	37
Wild land	503 700	55
Agriculture	73 000	8
Urban	3 400	1

Source: Marshall (1982).

TABLE 2 LAND USE OF SELECTED CROPS IN CANADA

	Total area	Proportion of improved land	Proportion of all land[a]
	(kha)	(%)	(%)
All wheat	14 229	30	20
Spring grains	5 992	13	8
Corn	994	2	1
Soybeans	387	0.5	0.5
Forages[b]	9 775	21	–
All forages[c]	25 438	–	37

[a] All land - improved and nonimproved on farms.

[b] Total of hay, improved and annual pastures

[c] Total of hay, improved, annual and unimproved pastures.

Source: Canada Census 1986.

TABLE 3 LAND AREAS DEVOTED TO FORAGE USES

	Area	Proportion
	(kha)	(%)
Hay	5 254	20
Total pasture	19 219	75
Improved	3 559	14
Unimproved	15 660	62
Annual pastures	962	4
Total forage	25 438	100

Source: Census of Canada 1986.

TABLE 4 CHANGES IN LAND AREA OF FORAGE

	1971	1981		1986	
Use	Area	Area	Change	Area	Change
	(kha)	(kha)	(%)	(kha)	(%)
Hay/silage	5 002	5 115	2	5 254	1
Improved pasture	4 147	4 424	6	3 559	–20
Unimproved pasture	24 896	19 767	–21	15 660	–21
Annual pasture	1 074	1 129	5	962	–15
Total	35 117	30 415	–14	25 435	–15

Source: Census of Canada, 1971, 1981 and 1986.

TABLE 5 ESTIMATED VALUE OF FORAGES IN CANADA, 1986

Animal units (number)	10 978 000
Feed requirements (t)	67 185 000
Value of forage ($ 000)	4 031 100 000
Value of all crops	9 174 950
All wheat	2 452 070
Corn/soybeans	682 570
Oats/barley	791 200
Canola	681 545

Source: Statistics Canada 1986; Value: $60/t; Reg: 6.12 T/AO.

TABLE 6 SPECIAL LAND USES AND REHABILITATION

Use	Area
	(ha)
Transportation	
Railways	506 000
Highways	2 509 000
Airports	613 000
	3 628 000
Urban	
Built up areas	1 569 000
Roads, parks	1 831 000
	3 340 000
Mining	
Deep rock and surface	285 000
	285 000
Energy	
Petrol pipelines	60 000
Natural gas pipelines	80 000
Electricity corridors	340 000
	480 000
Protected Lands	
Reserves	39 590
Wildlife preserves	56 879
	96 459
Total	7 349 939

Source: Marshall (1982).

Structural Changes Affecting Horticulture and Special Crops

Maureen A. Farrow[*]

Several factors indicated the need for this study. They were:

- the lack of organization in the current marketing system;
- the increased penetration of imports in supplying Ontario demand for fresh fruits and vegetables; and
- the success in the domestic marketplace, which increased returns to Ontario growers (Figure 1).

This study had six primary objectives:

- describe the present system;
- analyze the strengths and weaknesses;
- identify marketing systems in other jurisdictions;
- identify successful marketing systems to assist the Ontario industry;
- indicate factors required for implementation; and
- recommend measures to encourage adoption.

We approached this study by undertaking the following steps:

- assessed requirements of consumer, retail and HRI sectors;
- profiled existing marketing systems for nine crop groups;
- identified eight issues facing the Ontario fresh fruit and vegetable marketing system;
- analyzed nine marketing systems in other jurisdictions;
- developed the "ideal" Ontario system;
- assessed the Ontario sector relative to the "ideal" system;
- developed three options; and
- recommended an implementation strategy.

Consumer buying trends are changing. They are characterized by the following traits:

- increasing demand for high-quality fresh produce;
- demand for more exotic fruits and vegetables on a year-round basis; and
- growth of independent greengrocers.

The retail food market has several requirements. These requirements include:

- large volume and consistency of supply, grade and packaging;
- best price/quality combination; and
- distribution through a central warehouse.

The Hotel, Restaurant and Institutional sector relies upon imports. The key factors in servicing the HRI trade are freshness, consistent quality, appearance, availability, taste, uniform size and price. Other requirements include service at their convenience and small mixed deliveries through distributors.

We have profiled the marketing system for nine major crop groups. The crop groups examined include apples, tender fruit and pears, berries, salad vegetables, greenhouse vegetables, potatoes, root crops, cole crops and asparagus. For each crop group, we have reviewed key information. We looked into the background of each of the crops and growing regions and at the role of regulatory agencies in marketing. We found that the current distribution system contains regional variations, recent changes and grower/packer/shipper/agency involvement and relationships. After examining its strengths and weaknesses, we developed some suggestions for improvements.

We identified eight issues facing the Ontario system. These include:

- fragmentation of the industry;
- a high degree of grower involvement;
- a lack of horticultural marketing board enforcement authority;
- inconsistent use of wholesalers;

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- area and local competition;
- variable product quality and packaging;
- uneven quality control system; and
- instability in pricing.

The marketing systems in nine jurisdictions were assessed. These included those found in Canada in British Columbia, Manitoba and Quebec; those found in the United States in California and Boston; and those found outside North America in England, Holland, Israel and New Zealand. These systems were selected for several reasons:

- They were major growing areas for horticultural products.
- As exporters of fresh fruits and vegetables, they compete with Ontario produce.
- Some have undergone changes to address issues similar to those faced in Ontario.

We targeted information to address the issues identified in the Ontario system by looking at:

- roles of growers, distributors, packers, shippers in the marketing function;
- involvement of marketing boards or agencies and growers' associations;
- how prices are determined;
- inspection, packaging and post-harvest treatment; and
- information flow and market intelligence.

Responses to issues are different in other jurisdictions. We found that problems in the Ontario industry were handled through a variety of features in systems located elsewhere.

Industry fragmentation:

- vertical integration (California);
- definition of roles (England, New Zealand, Holland and Israel).

High degree of grower involvement:

- selling was handled as a distinct function, either through a cooperative (England, Holland) or through marketing boards (B.C., Manitoba, Israel and New Zealand).

Lack of marketing board authority:

- board has prosecution authority (New Zealand, B.C.);
- noncompliance is inefficient to growers (Holland); and
- cooperatives promote cooperation toward common objective (England).

Inconsistent use of wholesalers:

- auctions run by wholesalers (New Zealand);
- all wholesalers buy through system (Holland); and
- marketing board sells exclusively through wholesalers (B.C., Manitoba).

Area and local competition:

- centralized selling (Holland, England, B.C., Manitoba, Israel, and New Zealand);
- imports viewed as "the competition"; and
- peer pressure in coops (England, Israel).

Product quality:

- payout based on quality (Holland);
- centralized inspection (New Zealand, Holland, Israel, B.C., and Manitoba); and
- research (California, Holland).

Packaging and presentation:

- pack to retailer specifications (England);
- standardized containers (Holland, New Zealand and Quebec); and
- central packing (Israel, New Zealand, Holland and Manitoba).

Instability in pricing:

- auction-determined price (Holland, New Zealand);
- use of delivery quotas (B.C., Manitoba); and
- centrally handled sales (B.C., Israel, New Zealand and England).

We identified nine success factors of systems in other jurisdictions. These included:

- market orientation;
- organization to collect market intelligence;
- emphasis on high-quality product;
- good packaging, storage and handling;
- market-oriented pricing;

- market coordination;
- centralized selling;
- clear division of grower and seller roles; and
- grower cooperation and education.

We then established a ranking of crop groups based on closeness to the "ideal" Ontario system. Beginning with the crop closest to the "ideal" system, the ranking of crops is as follows:

- tender fruit;
- greenhouse vegetables;
- apples;
- root crops;
- potatoes;
- asparagus;
- cole crops;
- salad vegetables; and
- berries.

The actual ratings ranged from 20% to 63%.

We then established a ranking of characteristics of the "ideal" system across all crop groups. Beginning with the feature closest to the "ideal" system, the ranking of characteristics is as follows:

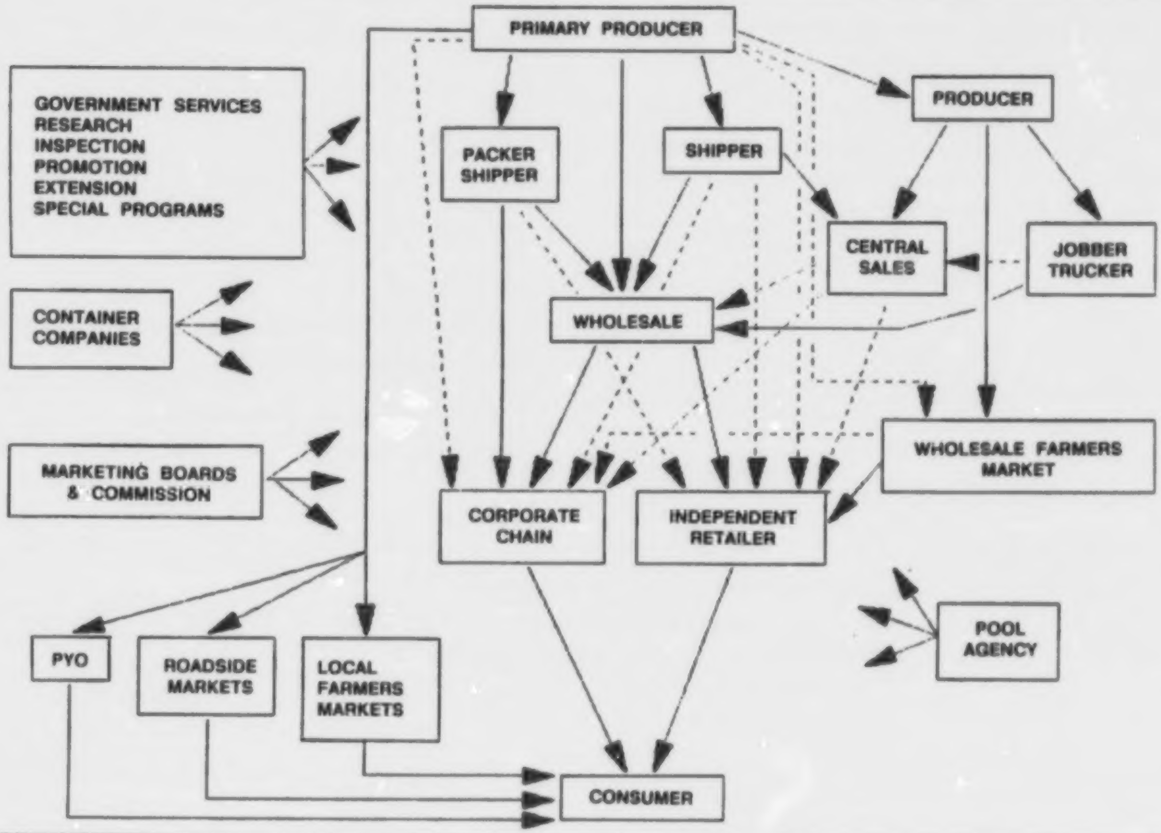
- handling and storage;
- market driven;
- market intelligence;
- packaging and presentation;
- market responsive pricing;
- consistent high quality;
- grower cooperation and education;
- central selling;
- grower and seller separation; and
- market delivery coordination.

The ratings ranged from 28% to 53%.

We then developed three strategy options. The steps we recommend include:

- "fill the holes" on a crop-by-crop basis;
- focus on needed improvements across all crop groups; and
- focus effort on one or two key crop groups to serve as "role models."

FIGURE 1 CURRENT SELLING OF FRESH ONTARIO FRUITS AND VEGETABLES


PRIMARY PRODUCER
GOVERNMENT SERVICES
RESEARCH
INSPECTION
PROMOTION
EXTENSION
SPECIAL PROGRAMS
PACKER SHIPPER
SHIPPER
PRODUCER
CENTRAL SALES
JOBBER TRUCKER
CONTAINER COMPANIES
WHOLESALE
MARKETING BOARDS & COMMISSION
WHOLESALE FARMERS MARKET
CORPORATE CHAIN
INDEPENDENT RETAILER
POOL AGENCY
PYO
ROADSIDE MARKETS
LOCAL FARMERS MARKETS
CONSUMER

FARM COSTS AND INCOME

The Future of Prairie Agriculture

*L. Auer**

The Economic Council of Canada is undertaking research on the subject of the future of Prairie agriculture at the request of the Prime Minister. This research is to deal with the underlying issues and options confronting Prairie agriculture in the context of the current severe problems besetting the Prairie grain economy. In addition to the Economic Council's own resources, special funding for the project is being provided by the federal government, the governments of Saskatchewan and Alberta, and several private sector organizations.

Dr. Andy Schmitz, a leading agricultural economist in both Canada and the United States and past consultant to the Saskatchewan government, the Canadian Wheat Board, the U.S. Department of Agriculture and the World Bank, is directing this project from Saskatchewan.

Our research focuses on the long-run trends and short-term instabilities and consists of five studies dealing with international issues and markets, adjustment problems, policy concerns and options for the future.

A study of the international grain market is to review the market performance of the major exporters, the dramatic switch of western Europe from a major importer to a large exporter, the rising importance of the developing and centrally planned economies, and the phenomenal growth in yields and production in China and India, countries so large that marginal shifts have a significant impact on world grain markets. The study will conclude with an assessment of future trends and Canadian prospects in the grain trade.

A study of the grain market outlook is to examine what the implications of the changes in the world grain economy are for the Prairie region. It deals with wheat, feedgrains and oilseeds, and projects the demand and supply trends of individual countries. It will show how government policies and farm technology affect the long-run developments.

The third study is to look at Canadian agriculture in a world subsidy war. It will spell out the welfare losses associated with protectionist farm programs and quantify the impact which a worldwide trade liberalization would have on grain prices and Prairie agriculture.

A fourth study addresses the future of the Prairie farm. It is to examine trends in farm output, income and employment, the key elements in the cost-price squeeze of farm revenues, and the magnitude of the farm financial crisis. It will deal with the future of the family farm and will assess the potential impact of alternative government support policies on Prairie farms.

A final study is on Canadian agricultural policy and western agriculture. It is to examine why the Prairie farm region faces a major crisis despite numerous agricultural programs. It will outline the elements of this crisis, review Canadian agricultural policy, highlight policy conflicts, discuss the difficulty of defining goals and suggest policy options to deal with the current crisis.

This research is being carried out by a team of economists located at the University of Saskatchewan in Saskatoon, the Economic Council of Canada in Ottawa, and the University of California at Davis. Research in all areas is proceeding on schedule and the results of each of the studies will be reported at a Conference on the Future of Prairie Farms in Saskatoon, Saskatchewan, on March 20-22, 1988. The Economic Council's statement containing council members' policy recommendations should become available by mid-1988.

As the research is not yet completed, I have prepared a brief review of the long-run trends and cyclical instabilities in farm production, the impact of prices on farm output and farm inputs, government support and long-run adjustment trends.

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* Economic Council of Canada

A gradual reduction in world grain stocks, continued economic growth, trade liberalization and further expansion of world grain trade are expected to improve wheat prices by 1990. While this short-term outlook is promising, the long-term is not. In spite of many government programs in grain exporting and importing countries, there is no evidence that world grain prices are more stable today than they were 50 years ago. That is not likely to change now. The recent drop in wheat prices and the expected recovery is part of the long-term pattern of market prices (Figure 1) and instability in production (Figure 2).

The expansion of wheat production in the 1970s was set off by the sharp rise in world market prices. In the Prairie region, crop and livestock prices reached their highest level around 1980 (Figure 3). But as prices rose, so did costs. Between 1970 and 1980, farm operating expenses more than quadrupled (Figure 4). At the same time, the price of farm land per acre rose sharply. Together with higher interest rates, this put many farmers who had purchased land and machinery at high prices during the late 1970s into financial jeopardy in the mid-1980s. If it were not for government payments today, the net income of Prairie farmers would be close to zero (Figure 5).

Over the past several decades, Canadian farmers have made some sizable adjustments. Many young people left the family farm for other occupations. Those who stayed on often bought more land and enlarged the scale of operations. As the farm population declined, the commercial base of the rural communities weakened. There are fears today that if the trend continues, large farm corporations will displace the traditional family farm. Why then the drive toward larger and larger farms?

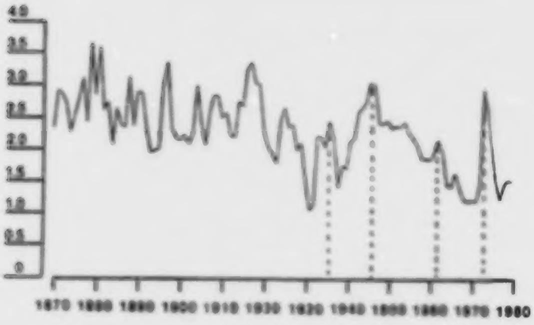
In their attempt to keep farm incomes growing at the same rate as incomes in other sectors of the economy, Canadian farmers, not unlike farmers in other industrialized countries, have improved their crop and livestock yields, mechanized their farming operations, and expanded the size of their farms. Had the adoption of new technology been without cost, the expansion in farm size and the reduction in the number of farms and in farm employment would have been nearly sufficient to meet that income goal. But the substitution of machinery for labor and the production of higher yields was not without cost, and therefore attainment of the long-run income goal would have required a more rapid rate of adoption of new technology, a more rapid expansion in farm size and a greater reduction in farm numbers and farm employment. Yet many farmers who did expand their farming operations are in serious financial difficulties today.

Between 1971 and 1986, the number of Prairie farms declined by 15% (Figure 6). Except for the large, corporate, managerial farms, which actually increased in numbers, the 15% decline was shared quite equally among both the small marginal farms and the larger family farms. There was, however, a pronounced shift toward part-time farming. By 1986 more Prairie farmers and other members of farm families were engaged in off-farm work than ever before. Most of them were young (below 35 years of age) and most of them operated small marginal farms. Over the same time period, many farmers reached retirement age and the number of middle-aged, full-time farmers operating marginal or family farms declined sharply. These findings lend support to the proposition that some of the moderately sized and even the large family farms are in danger of disappearing.

We also know, however, that incomes vary greatly from one farmer to the next. They differ between grain and livestock farmers, farmers on small and large acreages, farmers who bought land at low prices in the early 1970s and others who bought at high prices in the late 1970s. Some used their own funds, while others borrowed heavily.

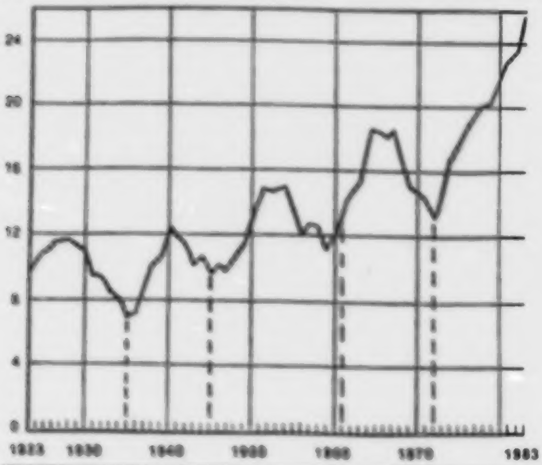
As indicated earlier, research at the Economic Council addresses a wide range of issues. We are also examining the characteristics of different farm types at the very detailed level of Census data. This will provide us with information on the financial situation of small marginal farms, larger family farms, and large corporate farms, of crop and livestock farms and of the major farming regions in each of the provinces. Exploratory work at the microeconomic level is promising and should yield substantial insights in the near future.

FIGURE 1 WHEAT PRICES RECEIVED BY FARMERS (constant dollars per bushel)



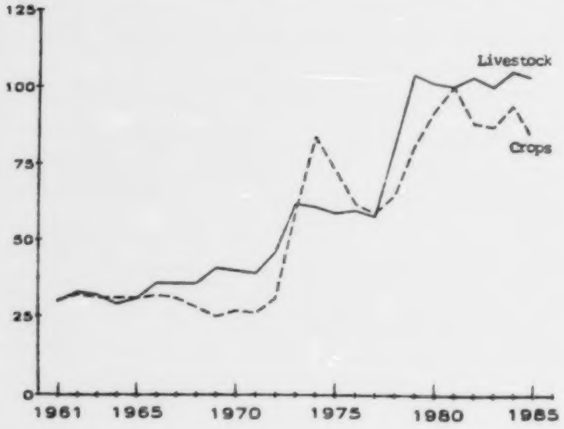
Source: D.G. Johnson, World Grain Trade Beyond 2000 (Ottawa: June 1984).

FIGURE 2 PRODUCTION OF WHEAT, FIVE-YEAR AVERAGES (Mt)



Source: Based on data from Statistics Canada.

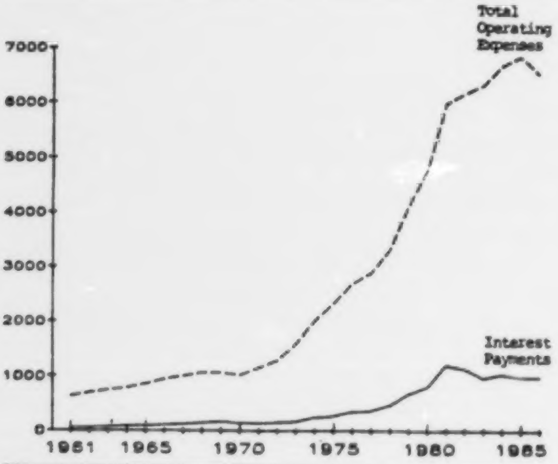
FIGURE 3 PRICES OF CROPS AND LIVESTOCK, PRAIRIE REGION (Index 1981 = 100)*



* Crops include wheat , oats, barley, rye, flaxseed and canola.

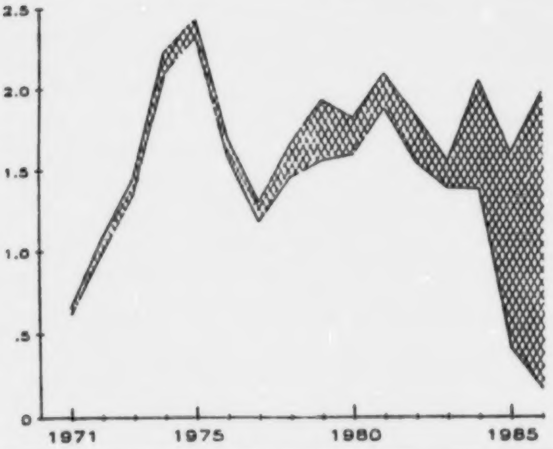
Source: Estimates based on data from Statistics Canada.

FIGURE 4 INTEREST PAYMENTS AND CASH OPERATING EXPENSES, PRAIRIE REGION ($ million)



Source: Estimates based on data from Statistics Canada.

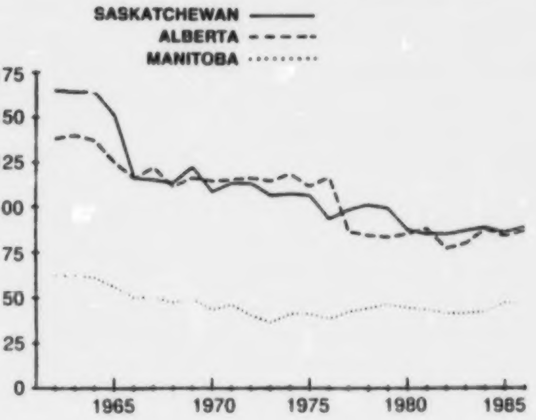
FIGURE 5 DIRECT GOVERNMENT PAYMENTS AS A SHARE OF REALIZED NET INCOME OF FARMS, PRAIRIE REGION ($ billion)*



* Realized net income includes receipts from farm operations, income in kind and supplementary payments as well as farm operating expenditures and depreciation. It excludes all nonfarm income.

Source: Based on data from Statistics Canada.

FIGURE 6 FARM EMPLOYMENT, PRAIRIE REGION (thousands of persons)



Source: Based on data from Statistics Canada.

The Changing Role of Off-farm Income in Canada

Ray D. Bollman and Pamela Smith***

INTRODUCTION

Agricultural policy objectives have been discussed for decades. Schultz (1949) summarized two chief objectives with the title of his book: *Production and Welfare of Agriculture*. These are briefly elaborated: "Policy issues from the point of view of economic analysis ... may be explored under the two following objectives, namely:

- Those pertaining to agricultural production – the efficient use of resources to produce farm products, and
- Those pertaining to the welfare of agricultural production – a satisfactory distribution and utilization of income among person on farms" (p. 11).

Canadian Ministers of Agriculture have echoed similar objectives more recently, for example (Whelan, 1977): "The first, and prime concern of this (food) policy ... is that consumers are assured, at all times, of high quality food at reasonable prices. The second objective is to assure efficient farmers of a decent living."

Such objectives are common elsewhere: according to Robson, Gasson and Hill (1987, 167), "income is widely agreed to be the fundamental objective of agricultural policy in western Europe."

Within Canada, one pervasive assumption informs the "income" objective, according to one observer (Loyns 1980, 66-67): "From basic economic textbooks, through professional agricultural literature, to farm organization position papers, all forms of the media, and onto the floors of every government in Canada, it is accepted that farm incomes are lower and more variable than income of the non-farming segement of the population."

The recent farm financial crisis has renewed concern about the income situation of Canadian farm families. With this concern has come a renewed interest in off-farm work. Some analysts in Canada and the U.S. have proposed that off-farm work is and will be one means by which farm families will survive in agriculture (Brinkman 1985, Salant, Smale and Saupe, 1986).

At the same time, few Canadian studies have been made of the total net income position of farm families and of the specific contribution of off-farm work to family income.

Canadian farm families have always obtained some of their income from off-farm work. Canada's first farmer of European descent, Louis Hébert, worked off his farm. In 1984, around Saltcoats in Saskatchewan, Her Majesty's Commissioners (United Kingdom 1894) reported: "In their spare time the crofters have no difficulty in obtaining work. A considerable number can always obtain employment on the local railways at $1.25 a day; but they seem to prefer to work out as farm labourers, for which they often secure from $25 to $40 per month and board during harvest. The young women can readily obtain work at from $8 to $10 per month; ... It is not only in summer that work is plentiful, but in winter also it can be secured by those who look for it. Several crofters told me that they made from $20 to $60 during last winter cutting and drawing wood to Saltcoats, for which they could obtain $3.50 a load. There is always good local demand for butter, poultry and eggs, and for roots and vegetables."

While off-farm work has been a way of life for many farm families, much more recent information suggests that little has changed. According to results from the 1986 Census of Agriculture, the only important variable that has not changed was the percentage of farmers reporting off-farm work (Canada, Statistics Canada, The Daily). Since 1941, about one third of census-farm opertors have reported some days of off-farm work (Figure 1).

Both historical and contemporary records suggest that little has changed with respect to either off-farm work (often mistakenly regarded as a proxy for off-farm income) or off-farm income. But either conclusion would be mistaken, for several reasons.

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WHAT IS OFF-FARM INCOME?

Off-farm income is not solely a function of off-farm employment. A variety of off-farm sources can be defined, where the sole criterion is that off-farm income is everything that is not derived from net farm (unincorporated self-employment) income. The following are the main sources:

- wages and salaries;
- net self-employment income from nonfarm business;
- investment income (interest, dividends, net rental for example);
- nonfarm government transfers (such as pensions, family allowance, Unemployment Insurance benefits);
- other pension income; and
- miscellaneous sources.

However, it should be noted that farm-based income paid to farm operators or other family members in the form of management fees, wages, salaries or dividends, for example, is problematic. Such forms of income will be discussed in subsequent sections.

IS OFF-FARM WORK A SIGNIFICANT OR VIABLE OPTION FOR "LARGER-SCALE" FARMS?

Two issues are considered here. The first is whether off-farm work has ever been a significant characteristic of "larger-scale" (or "family-sustaining" or "commercial") farms. Secondly, the issue of whether off-farm work could compensate for quite modest income fluctuations experienced by such farms is assessed.

To answer both questions, an appropriate definition of a farm is needed. By using the term "larger-scale" farm, we define a farm with sufficient net income to cover the minimum living expenses for a family of four, adopting Statistics Canada's low-income cutoff for a family of this size.

To meet this standard in 1961, a net farm income of $3 500 was required; by 1986, a net farm income of nearly $15 000 was needed (Figure 2). However, over these years, the ratio of net to gross farm income has fallen from roughly 0.4 in the early 1960s to 0.2 at the beginning of the 1980s. Therefore, it appears that gross sales would have had to be double during this period in order to provide the required level of net income by the 1980s.

By combining the required level of gross sales to provide a net income with the low income cutoffs, the gross sales for a "larger-scale" farm can be derived. Using this method, we find that gross sales of approximately $10 000 were needed in 1961; by 1986 the required gross sales has increased to more than $60 000 (Figure 4).

Only a small but nonetheless increasing proportion of all census farms qualify as "larger-scale" using this method. In 1961, only 14% met this standard but by 1986 the proportion had increased to 33% (Table 1).

What was the extent of off-farm work among the "larger-scale" farms during this period? In 1961, only 6% of these farm operators reported any off-farm work; by 1966, 18% did and the percentage reporting off-farm work by operators of "larger-scale" farms has remained at this level over the next 20 years until 1986. Furthermore, these operators accounted for only 2% of the aggregate days of off-farm work of all operators in 1961; and only 10% of the aggregate days in the last 20 years.

Only a small percentage of "larger-scale" operators work off-farm, and this percentage has remined stable for 20 years. Their off-farm days account for a stable percentage of all the off-farm days during the same period. Therefore, there appears to have been no increase in either absolute or relative participation in off-farm work by operators of "larger-scale" farms in order to supplement farm incomes.

The second issue concerns the potential of off-farm work to compensate for decreases in gross sales. As a rough measure of this potential, we have calculated the value of a 10% decrease in gross sales and have determined the number of weeks of work required to compensate for this loss, using average industrial weekly wage rates.

In the early 1960s, about 12 weeks of work were needed to compensate; by the mid-1980s, 14 weeks were needed (Figure 5). The conclusion would seem to be that off-farm work does not significantly enchance the viability of "larger-scale" farms, as three months of off-farm work are needed in order to compensate for even a relatively small decrease in output prices.

In summary, two conclusions follow from these findings. The first is that off-farm work has not been a significant factor for operators of "large-scale" farms in Canada during the last 20 years between 1966 and 1986. Secondly, given the number of weeks required in order to substitute for a modest decrease in product price, off-farm work appears not be a viable option for these farms.

TRENDS IN OFF-FARM INCOME FOR INDIVIDUAL "FARMERS"

To obtain a long time-series of farm and off-farm income from all sources, we analyze data published annually by Revenue Canada, Taxation (RC,T), where "farmers" are defined as individual taxfilers whose major source of income is gross (unincorporated self-employment) farm income. Although this definition includes more individuals than those operating "larger-scale" farms, RC,T "farmers" are significantly involved in farming.[1]

Between 1946 and 1985, income from farming has contributed a decreasing share to the total net income of RC,T "farmers." In the 1940s, net farm income represented 90% of their total income, but fell as low as 52% by the early 1980s (Figure 6). Conversely, off-farm income from all sources increased from less than 10% after World War II to nearly one half (48%) of total income for RC,T "farmers" in the first half of the 1980s.

Clearly, off-farm income has become increasingly important. But it would be mistaken to conclude that all of the increase is attributable to off-farm work throughout this time period.

Off-farm wages were the major source of off-farm income until the late 1970s. Between the mid-1940s and the early 1950s, off-farm work represented 5% of all RC,T "farmers," total net income, regardless of whether they worked off-farm (Figure 7). However, by the early 1970s, wages from off-farm work accounted for 15% of all RC,T "farmers'" total net income.

Therefore, during this period, off-farm income became increasingly important and wages from off-farm work accounted for most of the change. However, this trend changed during the latter half of the 1970s.

During the last decade between 1976 and 1985, a remarkably stable percentage (25%) of all RC,T "farmers" reported any off-farm wage income (Figure 8). And off-farm wages continued to represent roughly 15% of all RC,T "farmers'" total net income. However, as noted earlier (Figure 6), income from off-farm sources has continued to increase. What accounts for these developments?

Two factors appear to have contributed to the relatively decreasing importance of off-farm work as a source of off-farm income between the mid 1970s and 1985. First, new items (family allowances, realized capital gains and Unemployment Insurance benefits for interruptions in off-farm work, for example) were reported as income.[2] Income from theses sources account for roughly 7% of total net income for all RC,T "farmers" during this period. But a second factor – income from investments – is the more important in accounting for the significant increase in off-farm income.

Two developments were at work in increases in off-farm investments. Total net farm income tripled in the early 1970s, resulting in increased investments (usually bank accounts). Later in the same decade, interest rates also increased sharply. Together, these two resulted in investment income becoming the major source of off-farm income for all RC,T "farmers" by the early 1980s, and contributing 17% of their total net income (Figure 9).

These findings lead to three general conclusions. As contributors to total net income of all Canadian RC,T "farmers" during the last 40 years, income from off-farm sources has become steadily more important, while income from farming has become less important. For three decades, off-farm work accounted for most of the increase in off-farm income. However, in the last decade, income from off-farm investments has increased dramatically to the point that it now slightly outstrips off-farm work as the source of off-farm income for all RC,T "farmers" in Canada.

TRENDS IN OFF-FARM INCOME FOR FARM FAMILIES

To focus more explicitly upon the policy issue of the economic welfare of Canadian farm families requires the use of a different source from that used in the earlier section, which provides information only for individual "farmers." Accordingly, we use a 20-year time series available from Statistics Canada's Survey of Consumer Fiances. Special tabulations were requested for three definitions of a farm family:[3]

- where one individual had some net farm income;
- where one individual had net farm income as a major source of income; or
- where one individual reported farming as the main occupation.

Other definitions could be used; for example, a farm family might be defined as one in which net farm income is the main source of family income. These three definitions were used to identify families where at least one member is farming, although the first definition is weakest in this respect.

Nonetheless, the first and third of these definitions result in the same number of families, with similar characteristics. Over the last 10 years, there have been approximately 330 000 families where one individual had some net farm income or had farming as a major occupation; these families have similar levels and distribution of income.

The second of these three definitions is more limiting. There have been only about 210 000 families where one person's main source of income is from farming in the last decade. While the total net famiy income for these families is similar to income for families according to the first and third definitions, the second group of families differs from the other two in one important respect. Net income from farming provides a greater share (25%) of total family income (or conversely, off-farm wage income provides a smaller – 25% – share of the total). All three groups of families derive roughly the same proportion of total net income from other "off-farm" sources, such as investments, government transfer payments or pensions, for example.

Trends with respect to off-farm sources of income are similar for the first and third more broadly defined farm families. Net farm income provided 50% of the total income for these families in the late 1960s and has decreased to 30% more recently. Conversely, income from all off-farm sources now provides roughly 70% of their total income (Figure 10).

For the more narrowly defined families, where one person's main source of income is from farming, the trends are less pronounced but the same. In the the 1960s, net farm income provided two thirds of the total family income and now contributes about 50%. Accordingly, these families derive about 50% of their total incomes from off-farm sources (Figure 10).

Patterns of increase for the particular sources of income are roughly the same for all three groups of families. So, for example, the share of family off-farm income derived from off-farm work has remained essentially constant for all three groups between 1965 and 1986 (Figure 11).

In summary, these findings with respect to Canadian farm "families" are essentially no different from those reported for the last 20 years for individual farmers.

DO SOURCES OF INCOME VARY FOR FARMS OF DIFFERENT SIZES?

Size of farm is one variable used to define a family farm (e.g., Ehrensaft and Bollman 1985) and can be understood to represent the demand for on-farm labor and the potential to engage in off-farm work. As we will show, evidence from recent data confirms earlier analyses (Fitzpatrick and Parker 1965; Porteous 1974) showing that families on both smaller and larger farms have above-average incomes.

Unpublished tabulations from Statistics Canada's Agriculture Population Linkage for 1981 are the source here. One quarter of Canadian census farms can be classified as small farms with gross sales under $5 318; these farms had family incomes of $26 000 in 1980. The top 25% of Canadian farms had gross sales of $56 000 and average net family incomes of almost $30 000. Mid-sized farms – those in the 50th to 74th percentiles with gross sales between $21 805 and $55 999 – had average family income of $24 000.

The size of the income gap between mid-sized farms and either smaller or larger farms in 1981 is smaller than previously reported. Nonetheless, the inference that these farms are too large to permit off-farm work and too small to provide incomes comparable with those for smaller or larger farms may still be appropriate. However, this general inference might be tempered by another factor – age.

Lower net family incomes characterize all mid-sized farms, regardless of the age of operator. The same is not true for larger farms. On these farms, the older the operator, the higher the family total net income (Figure 13). Furthermore, when the operators are under 34 years of age, family income does not increase with farm size.

Lower average family total net incomes on farms in the mid-sized (50th to 74th) percentiles translate to a greater percentage below the low-income cutoff – 21% in comparison with 18% for all census farms (Figure 14). On these mid-sized farms, low incomes are most pronounced for families of younger operators; among those between 25 and 34 years of age, 32% had incomes below the cutoff.

The percentage of family income derived from off-farm sources is related to farm size. As gross sales increase, off-farm income declines in absoluted terms until the top 5% (those with sales greater than $12 500 in 1957 and greater than $160 000 in 1980) of all farms. Off-farm income on these farms with high gross sales is greater for two reasons. Some farms are incorporated and family members, including the operator, may receive wages or salaries for their on-farm work, which would then appear to be income from off-farm work. This first reason represents an important caveat to findings reported here.[4] Secondly, these farms are more profitable and provide greater off-farm investment income.

Across the gross sales distribution, net farm income accounts for the greatest share (60%) of total net family income on farms with sales in the 75th to 94th percentiles (gross sales of $56 000 to $159 999). Therefore, even for those farms with relatively large gross sales, off-farm income from all sources accounts for 40% of total net family income.

When data for 1957 and 1980 are compared, we see that the share of family income from all off-farm sources has increased about 20 to 25 percentage points for farms in all gross sales groups (Figure 15).[5] The share of wage income and investment income increased equally across all gross sales classes. Therefore, regardless of size of gross sales, farm families receive more of their total net income from off-farm sources and the increase is equally shared between off-farm wages and investments.

Is the increase in off-farm earnings attributable to an increase in off-farm work by operators or by other family members, who are usually spouses (Bollman and Smith 1986)? During this same period, between 1957 and 1980, the proportion contributed by spouses (other family) has remained roughly constant (Figure 16). Therefore, it appears that increases in off-farm earnings during this 15-year period have been equally shared by operators and spouses.

However, this same comparison of 1957 and 1980 also shows that spouses are more likely than operators to provide off-farm earnings on farms with larger gross sales (Figure 16). This pattern has also remained relatively constant over the 15-year period, confirming other findings (Bartlett 1986; Bollman and Smith 1986). Although spouses' participation in off-farm work is constant with respect to size of gross sales, it is related to their age. Younger women are more likely to participate in off-farm work.

COMPARING FARMER AND NONFARMER INCOMES

Sources of farm income have changed over time and reliance upon off-farm income sources varies with gross sales. These changes are adjustments made by members of farm families to attain or maintain adequate family income.

By comparing farmer and nonfarmer incomes, the strength of these adjustments can be measured. In fact, rough equality of these two incomes has been an explicit objective for some Canadian policy makers (Greene 1966): "The general policy of the government is... that family farm incomes will be... generally of the same proportion as incomes enjoyed in the industrial communities."

For these comparisions, only money income will be considered; we will not attempt the more sophisticated analyses of others (Kulshreshtha 1965, 1966, 1967; Shaw, 1978a, 1978b, for example). We acknowledge farm- nonfarm differences with respect to some goods and services[6] but assume that such differences have been relatively constant over time. Therefore any change in farmer- nonfarmer income differentials represents a real change. More heroically, we also assume no change in farmer-nonfarmer differentials in "economic welfare" associated with unrealized capital gains or losses.[7]

Considering only the money income of RC,T "farmers" (as defined earlier), we find that RC,T "farmers" had incomes roughly equal to 75% of nonfarm taxfilers between 1946 and 1972 (Figure 17). For the 1972-82 decade, RC,T "farmer" incomes were about equal to nonfarm incomes. But in subsequent years and until 1985, the gap that distinguished farmer and nonfarmer income reappeared.

It is reasonable to expect that considerably more farm taxfilers than nonfarm taxfilers are male. Therefore, comparing farm taxfilers with male nonfarm taxfilers may be more appropriate. Unlike the earlier comparison, this shows that average "farmer" incomes were never equal to nonfarm incomes at any point between 1963 and 1985 (Figure 18). RC,T "farmers'" incomes were closest to nonfarmers' (80%) in the late 1970s and were below 70% by 1985 (Figure 19).

These findings concerning the income gap betwen farm and nonfarm incomes are not consistently upheld by other data. When farm family (regardless of definition) incomes are compared with nonfarm family incomes using data from Statistics Canada's Survey of Consumer Finances, the gap appers to have persisted only between 1965 and 1972. In the following years until 1986, it seems that farm family net income is on par with the incomes of nonfarmers. However, these findings should be treated with caution, for the nonfarm incomes include all families and unattached individuals.[8]

One other means by which the "economic welfare" of farm families can be assessed involves the percentage who would be classified as having incomes below the low-income cutoff or poverty level for a family of four. Between 1965 to the mid-1970s, the percentage of Canadian farm families whose incomes were below this point fell (Figure 20). Since then and until 1986, that percentage has remained relatively stable. However, the percentage of Saskatchewan farm families with incomes below the cutoff jumped from 20% in 1985 to 25% in 1986, as a result of the decline in world grain prices.

SUMMARY AND CONCLUSION

The level and distribution of farm family income is one of two principal topics of agricultural policy analysis. In the last 40 years, Canadian farm taxfilers and farm families have obtained a larger and larger share of their total net income from off-farm sources. This finding is evident for three definitions of farm families and is also characteristic, to varying degrees, of farms of all sizes.

It would be mistaken to equate off-farm income with off-farm work. Until the last decade, off-farm work was the chief source of increases to off-farm income. However, in the last 10 years, increases in off-farm income are derived from two main sources in equal proportions, earning from off-farm work and off-farm investments.

Farm wives have contributed to the increased off-farm earnings. Increased earnings from off-farm work are generally contributed equally by both farm operators and their spouses, although there is a tendency for spouse' off-farm earnings to substitute for operators' on farms with larger gross sales.

Comparision of farmer and nonfarmer incomes suggest two quite different findings, depending on the sources of data used. When incomes of farm taxfilers are compared with nonfarm taxfilers' incomes, the historic gap between farmer and nonfarmer incomes appear to be widening after almost a decade of closing. The second comparison of farm family and nonfarm family income suggest that farm family incomes have remined on par with nonfarm family income for the last 15 years. However, our nonfarm family income data include "unattached individuals," which have been increasing in importance over time.

Farm families with incomes that are inadequate to meet a national low income cutoff now represent less than 20%; this percentage has remained relatively constant during the 1980s. In Saskatchewan, however, the percentage of farm families below the cutoff jumped from 20% in 1985 to 25% in one year. As well, low incomes are related to the age of the operator; 32% of all operators in Canada between 25 and 34 on farms with "mid-sized" gross sales had incomes that would not support a family of four. These findings suggest that factors other than size of gross sales are now associated with low farm incomes in Canada.

Notes

[1] Approximately 200 000 individuals were classified as RC,T farmers during the 1950s and early 1960s. Introduction of the Canada Pension and Quebec Pension Plans markedly increased the number of farmers filing income tax returns in the mid-1960s. Since then, however, RC,T farmers have decreased gradually from 290 000 to about 270 000.

[2] These items became taxable during this period and therefore appear as income in this source.

[3] Family is defined using the "economic" (rather than "census" or nuclear) family concept, which includes all individuals related to the operator by blood or marriage living in the same household.

[4] Family income data from the 1971 and 1981 Agriculture-Population Linkages appear to suggest that family incomes do not significantly increase with greater gross sales. For example, families on farms with gross sales in the top 5% report higher off-farm and lower (unincorporated) net farm incomes. This switch in sources

of "reported family income" results in incomes of similar size compared with families on farms with lower gross sales. Recently Ehrensaft (1987) has shown with National Farm Survey data (which the authors have confirmed with unpublished tabulations from the 1986 Census of Agriculture) that net farm income of large farms, as opposed to the net unincorporated farm income of farm families, is indeed large. Therefore, the caveat is that family incomes discussed here do not include retained earnings of incorporated farms.

[5] We think this is not the result of retained farm corporate incomes but is at least in part due to falling net to gross ratios.

[6] Such as the provision of housing within household production and the availability and costs of others services (for example, medical and recreational services, household consumption items and furnishings, family clothing and the like).

[7] Some urban housing prices have undergone significant increases and decreases paralleling those in agricultural land, in pattern if not in magnitude. Although urban land prices have not decreased as sharply as those for farmland, both the increases and decreases provided unrealized gains and losses for both farm and nonfarm Canadians. With others, Brinkman (1981) has suggested that measuring both unrealized gains and losses on the upswings and downswings, respectively, may help to explain the behavior of the owners of capital assets. Aukes (1987), however, has argued that owners of capital, their advisers and, more generally, policy makers should base their decisions only on the "real" flow (that is, on the actual income flow) and not on the "expected" income flow, as it is capitalized into the price of the asset.

[8] "Unattached individuals" are those who can be assumed to have average incomes that are lower than those for individuals who are members of families.

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TABLE 1 AGGREGATE PRODUCTION AND OFF-FARM WORK BY OPERATORS OF "LARGER-SCALE" FARMS

	Approximate gross sales to be "larger-scale"	Approximate proportion of census-farms qualifying as "larger-scale"	Approximate proportion of aggregate sales by "larger-scale" census farms	Proportion of operators of all census farms reporting "some days of off-farm work"	Proportion of operators of "larger-scale" census farms reporting some days of off-farm work	Proportion of aggregate days of off-farm work on "larger-scale" census farms
	($)			(%)		
1961	9,068	14	50	32	6	2
1966	10,472	21	64	38	21	7
1971	16,854	17	62	35	19	6
1976	23,502	32	n.a.	34	15	12
1981	54,926	25	74	39	18	9
1986	60,602	33	82	39	18	10

"Larger-scale" farms are farms with gross sales that can, on average, provide a level of net farm income above the low-income cutoff level.

Source: Canada, Statistics Canada, Censuses of Agriculture, 1966 to 1986.

FIGURE 1 PROPORTION OF OPERATORS REPORTING OFF-FARM WORK (%)

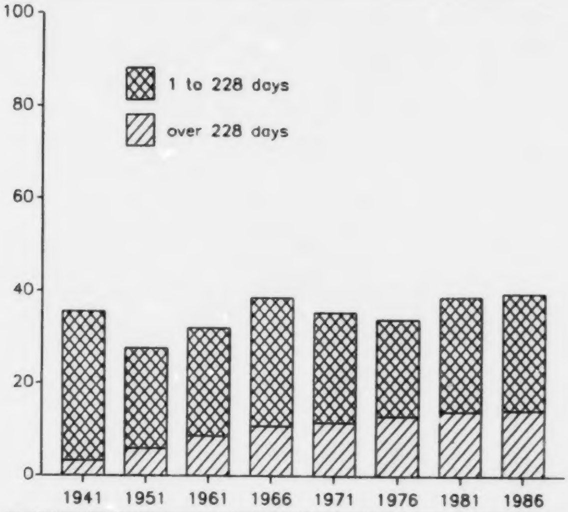


FIGURE 2 LOW-INCOME CUTOFF FOR A FAMILY OF FOUR, 1959 BASE ($)

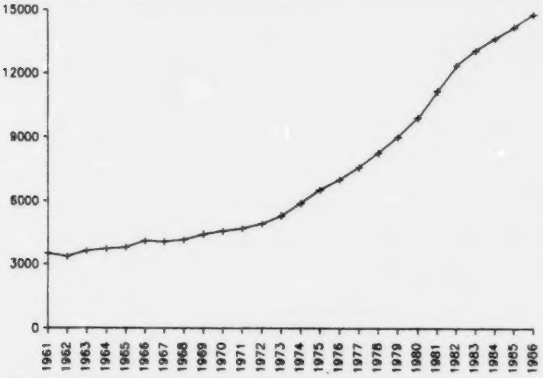


FIGURE 3 RATIO OF NET TO GROSS FARM INCOME

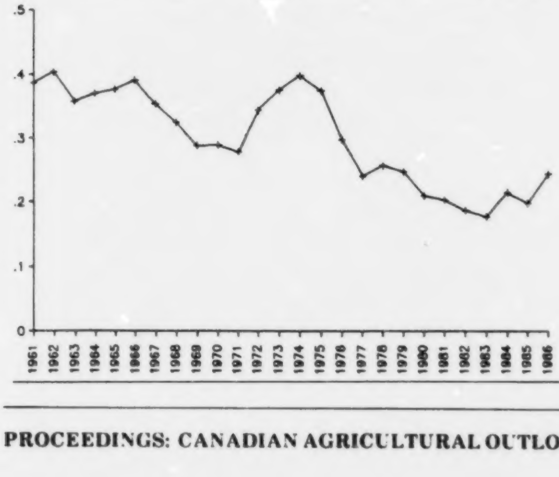
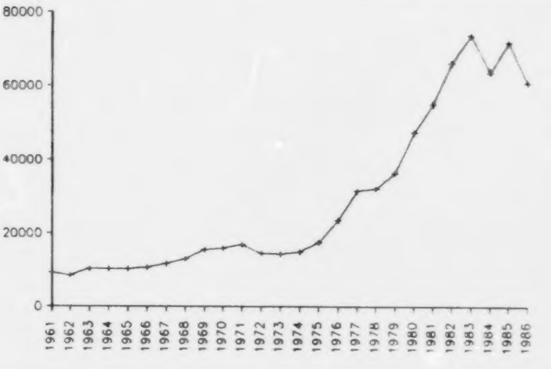


FIGURE 4 LEVEL OF GROSS SALES PER FARM REQUIRED TO BE "LARGER-SCALE"* ($)



* Defined as net farm income above the low-income cutoff (1959 base)

FIGURE 5 AMOUNT OF OFF-FARM WORK REQUIRED TO OFFSET A 10% FLUCTUATION IN "LARGER-SCALE" GROSS SALES (weeks)

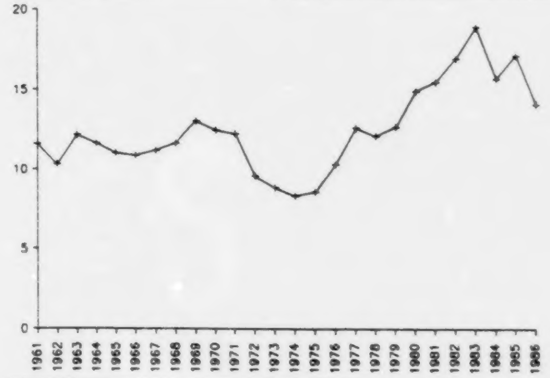
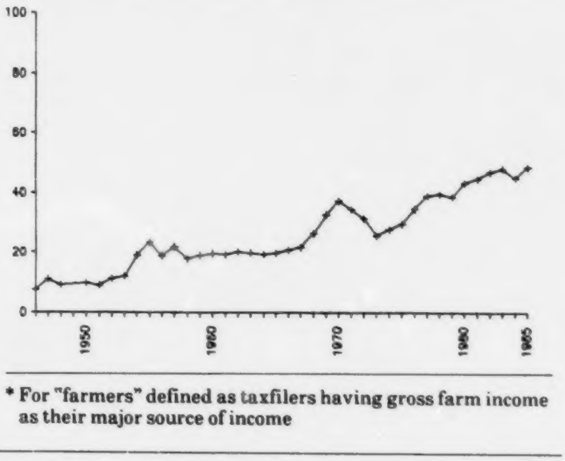
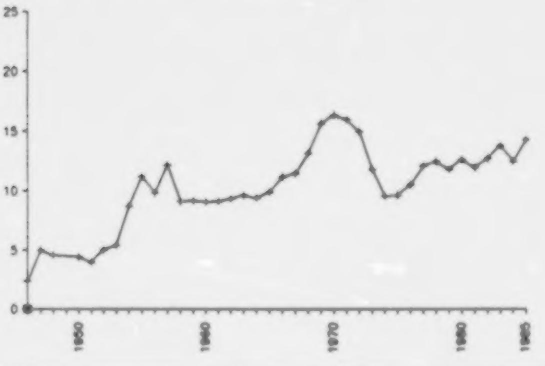


FIGURE 6 PROPORTION OF NET FARM INCOME* DERIVED FROM ALL OFF-FARM INCOME (%)



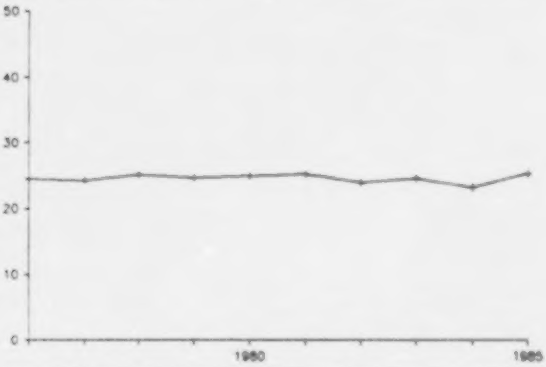
* For "farmers" defined as taxfilers having gross farm income as their major source of income

FIGURE 7 PROPORTION OF NET FARM INCOME* DERIVED FROM OFF-FARM WAGE INCOME (%)



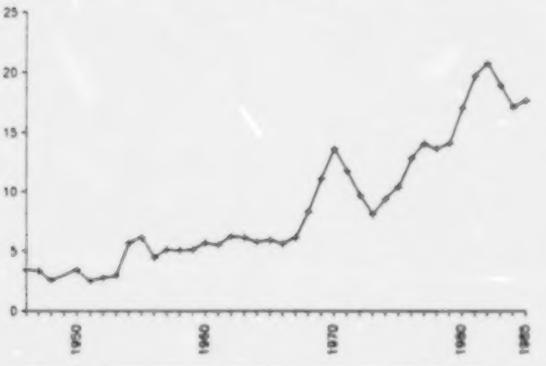
* For "farmers" defined as taxfilers having gross farm income as their major source of income

FIGURE 8 PROPORTION OF "FARMERS"* REPORTING OFF-FARM WAGE INCOME (%)



* Defined as taxfilers having gross farm income as their major source of income

FIGURE 9 PROPORTION OF NET FARM INCOME* DERIVED FROM OFF-FARM INVESTMENT INCOME (%)



* For "farmers" defined as taxfilers having gross farm income as their major source of income

FIGURE 10 PROPORTION OF NET FARM FAMILY INCOME DERIVED FROM ALL OFF-FARM INCOME (%)

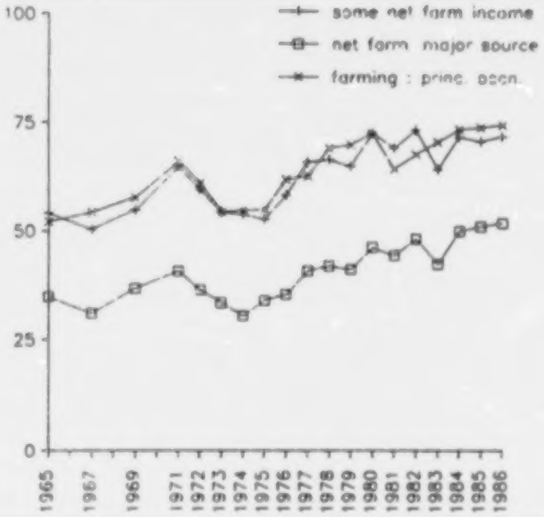


FIGURE 11 PROPORTION OF NET FARM FAMILY INCOME DERIVED FROM OFF-FARM WAGE INCOME (%)

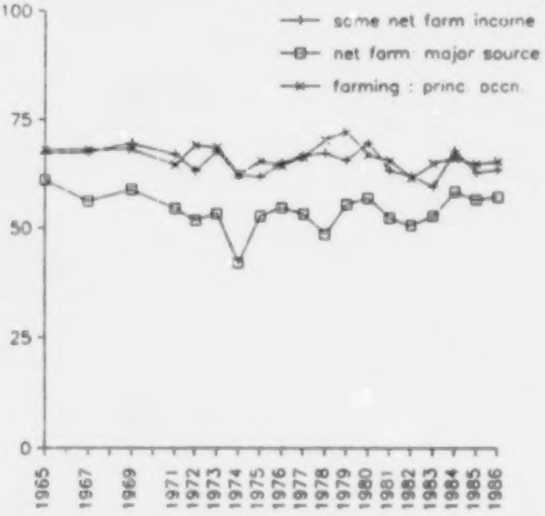


FIGURE 12 AVERAGE FARM FAMILY INCOME BY GROSS FARM SALES, CANADA, 1980 ($)

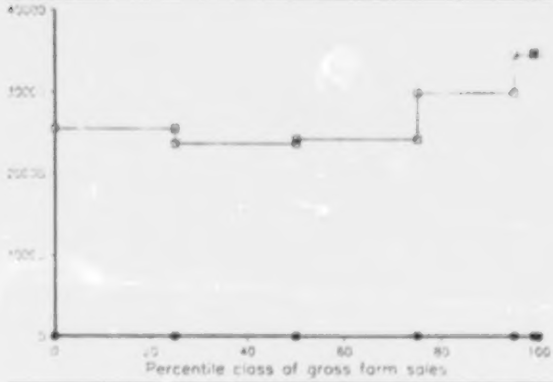
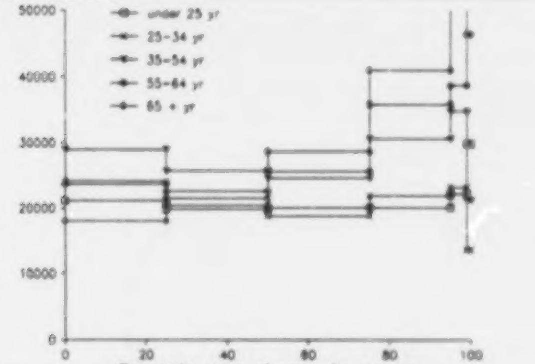
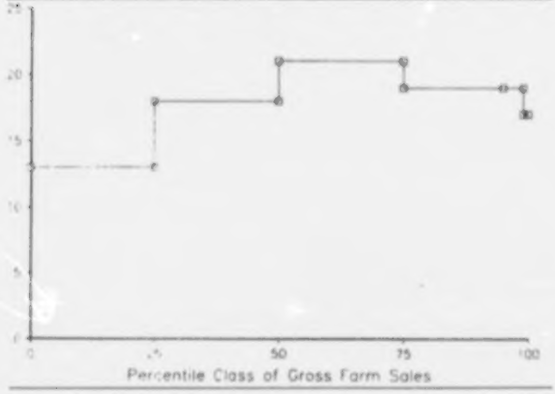


FIGURE 13 FARM FAMILY TOTAL NET INCOME BY GROSS FARM SALES AND AGE OF OPERATOR*, CANADA, 1980



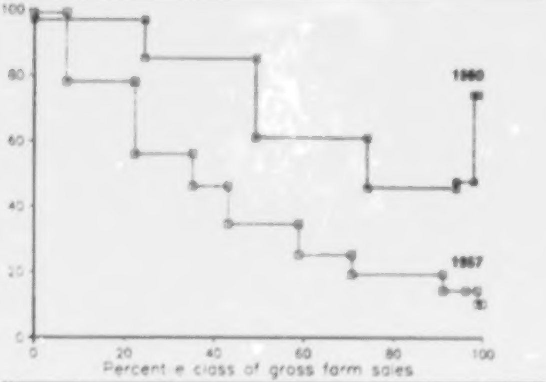
* Prop. and part. only

FIGURE 14 PROPORTION OF "FARM" FAMILIES* WITH INCOMES BELOW THE LOW-INCOME CUTOFF BY GROSS FARM SALES, CANADA, 1981 (%)



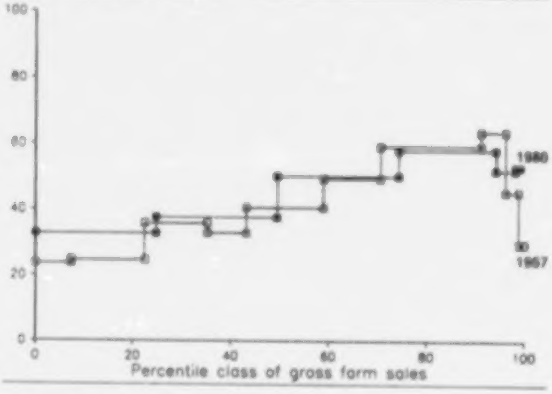
* Census farm operator families

FIGURE 15 PROPORTION OF FARM FAMILY INCOME DERIVED FROM ALL OFF-FARM INCOME, BY GROSS FARM SALES, CANADA (%).



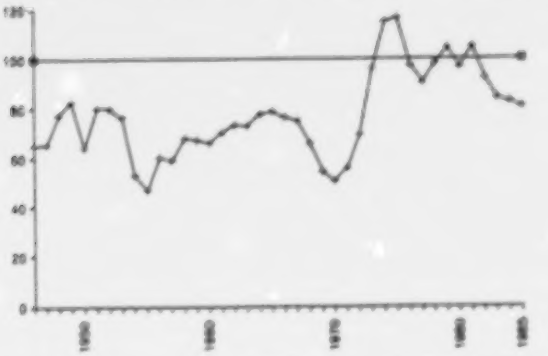
* Prop. and part. only

FIGURE 16 CONTRIBUTION OF NONOPERATOR OFF-FARM "EARNINGS" TO TOTAL FARM FAMILY OFF-FARM "EARNINGS," BY GROSS FARM SALES, CANADA (%)



* Defined as taxfilers having gross farm income as their major source of income

FIGURE 17 RATIO OF "FARMER"* TO NONFARMER INCOME (%)



* Defined as taxfilers having gross farm income as their major source of income

FIGURE 18 RATIO OF "FARMER"* TO MALE NONFARM INCOME (%)

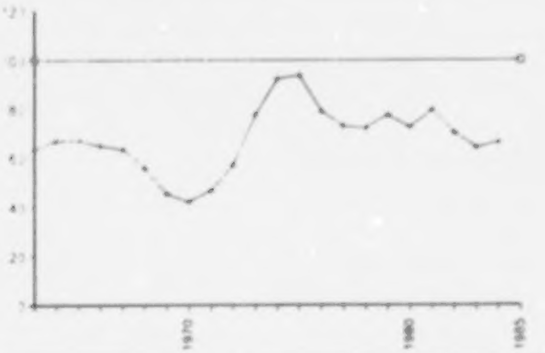


FIGURE 19 RATIO OF "FARM" FAMILY INCOME TO NONFARM FAMILY INCOME (%)

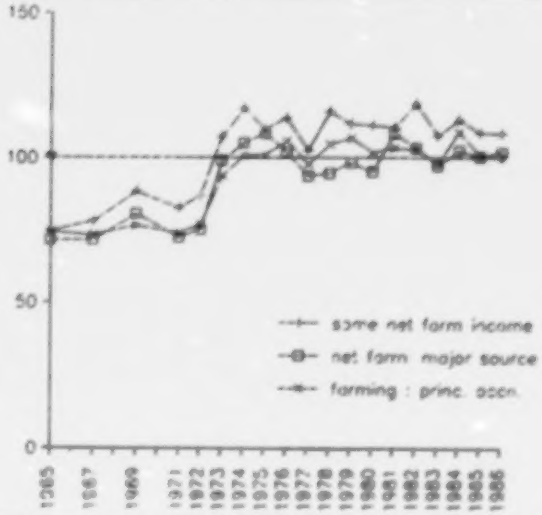
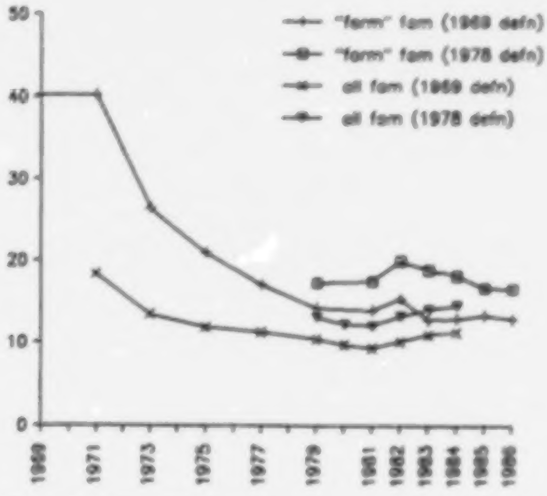


FIGURE 20 PROPORTION OF "FARM" FAMILIES* WITH INCOMES BELOW THE LOW-INCOME CUTOFF (%)



* Defined as families in which any member reports an occupation in farming

Changes in Off-farm Work and Off-farm Income in Saskatchewan

*Pamela Smith**

INTRODUCTION

Central findings with respect to trends in off-farm work in Canada as investigated by the article in this publication by Ray D. Bollman and Pamela Smith on "The Changing Role of Off-Farm Income in Canada" can be summarized as follows:

- The number of Canadian operators on "larger-scale" farms who report off-farm work has not increased recently, nor has their share of the aggregate days of off-farm work.
- Canadian farms with both smaller and larger gross sales are more likely to have off-farm work income, whereas farms with "upper-middle" gross sales are less likely.
- As gross sales increase, Canadian farm operators are less likely to have off-farm work income, whereas there is no such relationship for spouses' for whom the reverse is often the case.
- Age of Canadian farm operators is unrelated to off-farm work, but spouses' age is related, in that younger spouses are more likely to have off-farm employment.

Prelimary findings of a recently completed retrospective survey of selected communities in Saskatchewan[1] both confirm some of these conclusions and render others ambiguous, if not doubtful. My purpose here is to provide these preliminary findings, thereby encouraging further debate and analysis.

As noted elsewhere, there are relatively few studies of the income position of Canadian farm families, of the contribution of off-farm work of farm men and women to farm family income or of comparability of farm and nonfarm incomes. Although results from the Saskatchewan survey are not uniformly consistent with findings for Canada as a whole, ambiguity or doubt can be as useful as incentive to further research as certainty.

Preliminary findings reported here are based on a limited number of Saskatchewan farms. Therefore, data available from two Statistics Canada sources are used to describe the situation on all Saskatchewan farms, against which these preliminary findings for a much smaller sample can be assessed.

GENERAL TRENDS IN SASKATCHEWAN

In 1986, according to the Census of Agriculture, the percentage of operators with either full- or part-time off-farm work reach a level not paralleled since 1941 (Figure 1). Full-time off-farm income was virtually nonexistent in the 1940s and 1950s, but has increased steadily during the 45-year period. Changes in part-time off-farm work, however, account for both the increases and decreases in the percentages of operators reporting off-farm income.

Average days of off-farm work for operators with this employment show a steadily increasing commitment from about 35 days in the 1940s to 115 days in the 1960s, followed by a dramatic increase to over 200 days in 1971. In the next decade, average days fell to 146, but increased again to 151 days by 1986 (Figure 2). This average is unprecedented, except in 1971.

Consistent with these trends, the percentage of net farm family income derived from farming for three different definitions of farm families has generally decreased in the last 20 years, although there was a significant upturn in 1973 and 1975 and a smaller increase between 1982-83 (Figure 3). Families in which one person had farming as a major source of income derived more than 75% of their income from farming 20 years ago; by 1986, around 55% of their income came from farming.

Within income from all off-farm sources, investment income has played a varying role, accounting for some of the increase in off-farm income over the last 20 years (Figure 4). During the 1967-77 decade, the percentage of all off-farm income from investments increased steadily to a high of 30% for families with one person whose major income source was farming, and remained around this level for the next five years. But since 1982, the percentage of all off-farm income earned from this source represented about 25% on average.

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* University of Regina. The assistance and comments of R.D. Bollman, J.E. Fagan, D.Scott and R.M. Stirling are gratefully acknowledged.

Unlike the national trends, however, income from off-farm investments is not significant a source of all off-farm income (Figure 4.) Income from off-farm work has continued to be more important, yielding more than 45% of all off-farm income for families with one person whose major source was farming between 1967-74 and 1979-86.

These findings suggest that income from investments has an important source, but that off-farm work on average continues to be the more important source of off-farm income on Saskatchewan farms in the last 20 years.

In this context, but remembering that income from off-farm work reached an all-time low in 1975 during the last 20 years, we turn to preliminary findings from two surveys in some Saskatchewan communities.[2]

CHANGES IN OFF-FARM WORK, SELECTED SASKATCHEWAN COMMUNITIES

In 1975, no family member had any off-farm employment in 67% of the households. A dozen years later, the majority of farm households (58%) had at least one person who had some off-farm employment (Figure 5). The greatest change has occurred among those families in which two or more family members had off-farm employment. In 1975, only 5% of Saskatchewan farm families had two or more members with off-farm employment, but 29% had at least two persons with off-farm work by 1987.

Most of the increasing participation in off-farm employment is accounted for by women. Although the percentage of men with off-farm work increased from 20% in 1975 to 36% in 1987, women are now much more likely (35%) to have off-farm work than they were in 1975, when only 10% of women had off-farm work (Figure 6).

Age is a statistically significant factor associated with participation in off-farm work for both farm men and women (Figure 7). Men under 35 years of age are more likely than any other age group to have off-farm employment; 54% of them worked off-farm in comparison to 46%, 24% and 16% of those aged 35 to 44, 45 to 54 or 55 and older, respectively. However, women in their "middle years" between 35 and 44 are more likely to work off-farm; 56% of them had off-farm employment; while 38%, 33% and 14% of those under 35, 45 to 54 and 55 or older did.

Computations performed but not reported here suggest that net farm income is also significantly but weakly associated with men's off-farm employment. However, net farm income is not related to women's off-farm employment. Men on farms with a net farm income of less than $25 000 were more likely (39%) to have off-farm employment than those on farms with net incomes of $25 000 or more, of whom 26% worked off-farm.

When age is cross-tabulated with income, these relationships are more complex. Generally, however, the following patterns are evident, but only three of the eight associations are even weakly significant, in statistical terms (Figure 8):

- For both men and women under 35 years of age, there was a curvilinear relationship between off-farm employment and net farm income; men were more likely than women to work off-farm.
- Men and women aged 35 to 44 worked off-farm regardless of net income, although women on farms with an income between zero and $5 000 were much more likely to have off-farm employment; generally, women were more likely to have off-farm employment than men in this age group.
- Men aged 45 to 54 were consistently less likely to have off-farm employment as net income increased, while women in this age group were more likely to do so at the zero to $5 000 income level; there were generally no strong differences between men and women with respect to participation in off-farm work.
- For both men and women aged 55 and over, there was no consistent relationship between off-farm work and income, nor were there any noteworthy differences between their respective rates of participation in off-farm work.

Types of off-farm occupations for men and women are of interest for at least two reasons. In general terms, these may "explain" some of the variation in participation noted above. Secondly, if off-farm employment is to be a farm income alternative – as a means of either assisting entry to farming or supplementing current farm income – then some consideration of labor market demand is useful. Other types of data are obviously relevant, but men's and women's off-farm occupations are useful, in either case.

Roughly 15% of both men and women with off-farm employment worked in managerial, administrative and related occupations in 1987 (Figure 9). Similarities in the distributions for men and women end here. Processing, construction and trades accounted for 38% of men's off-farm occupations and the "traditionally" female occupations of clerical, sales and service for 38% of women's. Another 38% of women worked in teaching, medicine and health, and 17% of the men were employed in transportation occupations. Together these occupations accounted for 90% of women's and 72% of men's off-farm employment. If off-farm employment is to be a means by which farm incomes are supplemented, whether these occupations show promise of growth in rural areas is a factor that ought to be considered.

SUMMARY AND CONCLUSION

During the last 20 years, Saskatchewan farm men and women have become increasingly involved in off-farm work. Farm families in Saskatchewan derive an increasing percentage of their total income from off-farm sources. Although income from investments has increased its share within off-farm sources of income, income from off-farm work continues to be a more important source, according to data available for all farm households from Statitistics Canada.

Results from surveys of farm households in selected Saskatchewan communites suggest that both farm men and women are now more likely to have off-farm work than they were in the mid-1970s. Farm women have increased their participation in off-farm employment more rapidly then men. Women are most likely to work in two combined occupational groupings – clerical, sales, service or teaching, medicine, health – in equal proportions. Men find employment in processing, construciton and trades occupations, followed by both transportation or managerial, administrative and professional jobs to a lesser degree.

Among these households, there were statistically significant relationships betwen men's and women's ages and their rates of involvement in off-farm work. These findings confirm those of others, as reported by Findeis, Hallberg and Lass.[3] These findings also suggest the possiblility of a "substitution effect," where women may take up off-farm employment as farm men discontinue it.

Net farm income is also significantly associated with off-farm work, although less strongly and only for farm men generally, where increasing net farm incomes decrease the likelihood of off-farm employment.

Findings reported here are only preliminary and are based on a limited number of cases in selected Saskatchewan communities. However, they are not uniformly comsistent with findings for farm families in Canada or the United States, which emphasizes the needs for further research and for sensitivity to regional differences among farm families in Canada.

Notes

[1] Canadian Plains Research Centre, University of Regina, "Farm, Family and Community Study," 1987, ongoing.

[2] Canadian Plains Research Centre (1987, n = 304) and Sample Survey and Data Bank Unit, University of Regina (1976, n = 259). The degree to which communities in which these surveys were conducted are representative of all Saskatchewan communities is uncertain. Simple random samples of this size should yield results that are accurate within 5%, 19 times out of 20, however.

[3] Findeis, J.L., M.C. Hallberg and D. Lass, 1987, "Off-farm employment: Research and issues," Paper presented to the 1987 American Agricultural Economics Association annual meeting and available from the Agricultural Economics and Rural Sociology Department, Pennsylvania State University.

FIGURE 1 CENSUS FARM OPERATORS WITH OFF-FARM WORK, SASKATCHEWAN, 1941-86 (%)

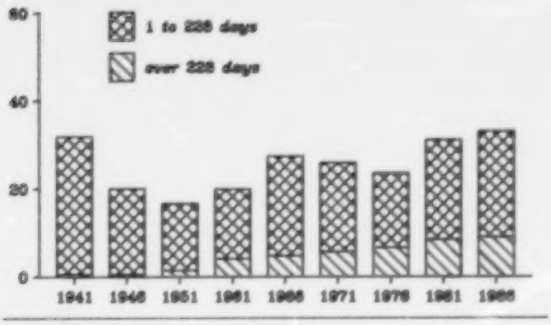


FIGURE 2 LENGTH OF OFF-FARM WORK, SASKATCHEWAN, 1941-86 (days)

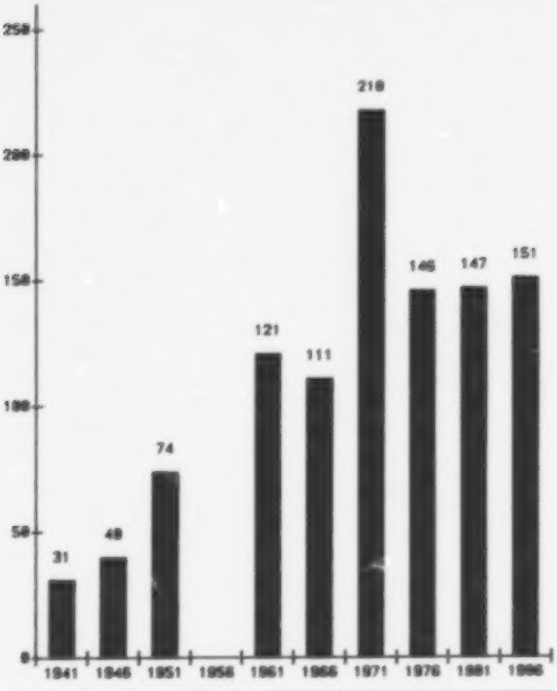


FIGURE 3 PROPORTION OF FAMILY INCOME FROM FARMING, SASKATCHEWAN, 1965-86 (%)

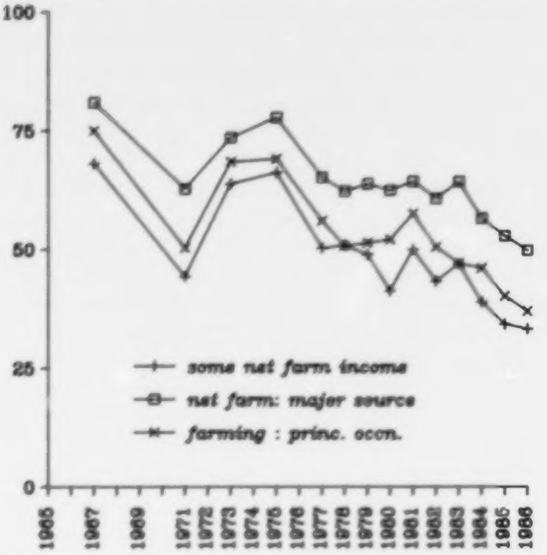


FIGURE 4 SOURCES OF OFF-FARM INCOME, SASKATCHEWAN, 1967-86 (%)

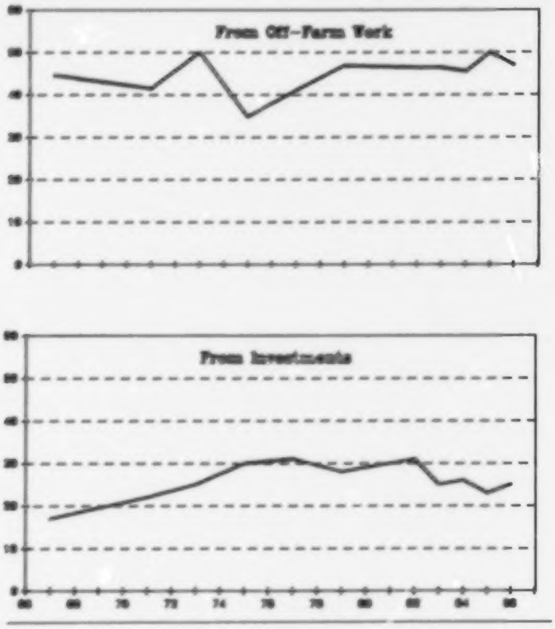


FIGURE 5 NUMBER OF FAMILY MEMBERS WITH OFF-FARM EMPLOYMENT, 1975 AND 1987

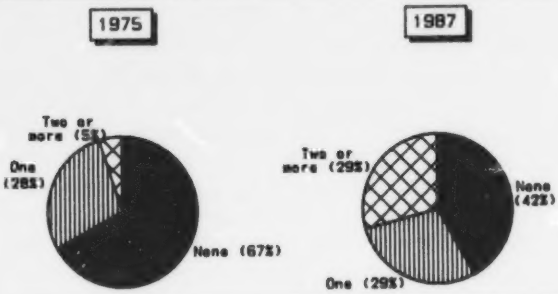


FIGURE 6 PROPORTION OF FAMILY MEMBERS WITH OFF-FARM EMPLOYMENT, 1975 AND 1987 (%)

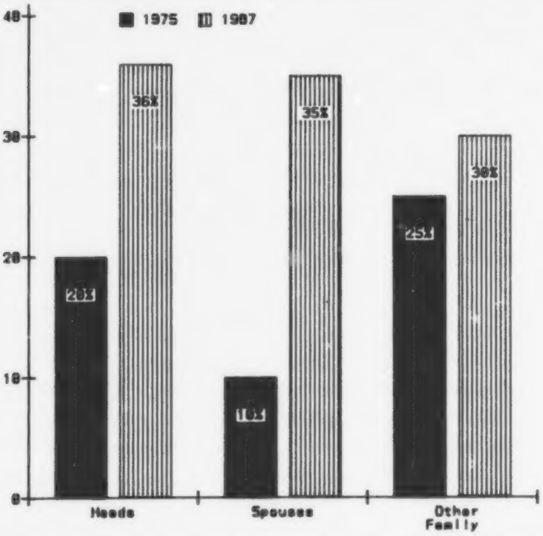


FIGURE 7 PROPORTION OF MEN AND WOMEN WITH OFF-FARM EMPLOYMENT, BY AGE 1987 (%)

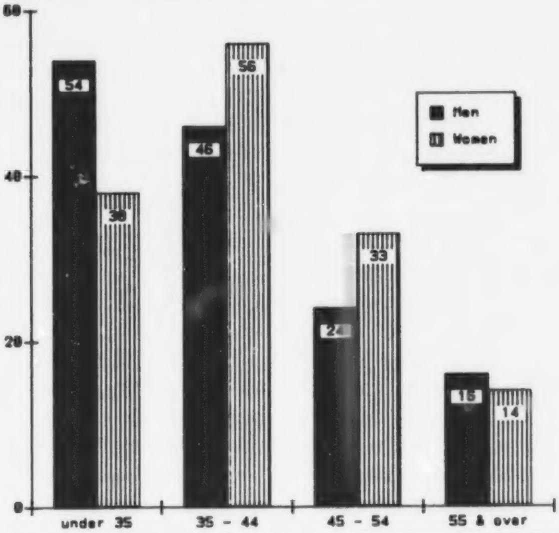


FIGURE 8 PROPORTION OF MEN AND WOMEN WITH OFF-FARM EMPLOYMENT BY AGE AND NET FARM INCOME, 1987 (%)

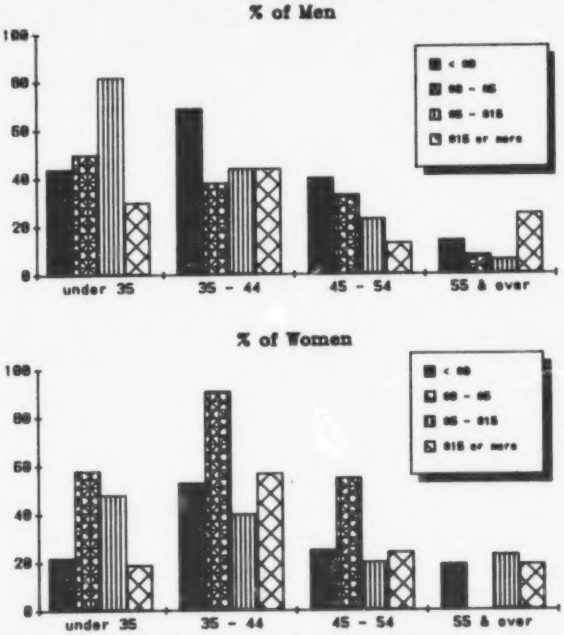
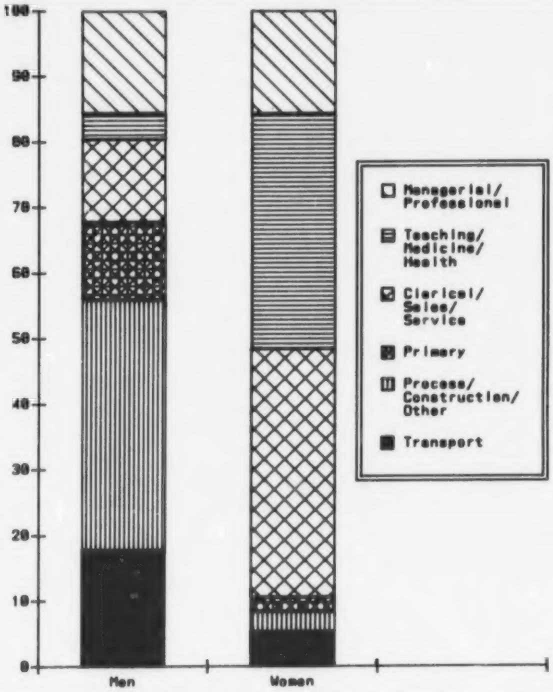


FIGURE 9 OCCUPATIONAL DISTRIBUTION OF MEN AND WOMEN WITH OFF-FARM EMPLOYMENT, SASKATCHEWAN, 1987 (%)



Provincial Farm Income Situation

*Wayne Jones**

In looking at provincial farm incomes, I would like to accomplish two things. First, I hope to show that 1987 has been a relatively good year for Canadian agriculture in terms of farm incomes, although this in part is due to substantial government assistance. Moreover, the favorable income situation has not been sufficient to alleviate the financial difficulties currently facing agriculture. Second, in keeping with the Conference theme of examining the changing structure of our industry, I would like to briefly discuss some of the structural aspects of farm income, more specifically the uneven distribution of aggregate income among the some 290 000 producers who make up the industry.

Let me start, however, by acknowledging the invaluable assistance of the many officials of the Farm Income and Prices Section of Statistics Canada and the provincial Ministeries of Agriculture in the preparation of the farm income estimates. Their efforts are greatly appreciated.

Turning to my primary objective, I would like to examine the 1987 provincial farm income situation by looking first at the latest estimates for farm cash receipts, followed by a review of farm expenses and, finally, realized net income. In order to put these 1987 estimates into perspective, my presentation will focus on the absolute and relative changes from 1986 levels. However, details of the 1987 income estimates, by province, are available under "Farm Income Highlights" in the December *Market Commentary*.

FARM CASH RECEIPTS

Looking first at farm cash receipts, total cash receipts include receipts from the market plus gross direct program payments to producers. Cash receipts include the gross payouts from such programs as federal and provincial stabilization schemes, crop insurance and, for 1987, the Special Canadian Grains Program. Farm cash receipts for 1987 increased from year earlier levels in all provinces except Manitoba where receipts fell by almost 5% from a record high level in 1986 (Table 1). The strongest gains in cash receipts, ranging from 6% to 12%, are projected for the Atlantic provinces, with small gains of 2% to 3% expected for the other provinces this year. Given that a 5% change in cash receipts will result in a 25% to 30% change in net income, other factors remaining constant, these relatively small projected changes in cash receipts have a significant impact on farmers' incomes.

Some of the highlights affecting 1987 cash receipts include substantial drops in grains and oilseeds prices, which were partially offset by higher marketings in the 1987 calendar year, particularly wheat marketings. Higher cattle prices helped to increase already high cattle and calf receipts, relative to historical levels. The increase in cattle and calf receipts was most evident in Saskatchewan, Alberta, British Columbia, and Prince Edward Island. Receipts for the dairy, hog and poultry sectors are projected to remain fairly stable despite slightly higher marketings because of stable or, in the case of hogs and poultry, weaker prices. The fruit, vegetable and nursery sectors are expected to experience increased receipts for 1987 in most producing provinces. The largest gains are likely to be in Nova Scotia, Quebec and British Columbia. A 30% increase in potato prices on average for calendar year 1987 was a major source of increased cash receipts for Prince Edward Island and New Brunswick. Conversely, tobacco receipts declined 50% from 1986 levels in Ontario. This reflects a return to more normal marketing levels after a large increase in 1986, the result of the fact that most of the 1985 tobacco crop was marketing in early 1986. Finally, fur receipts are expected to rise sharply by 175% in 1987. Fur receipts from commercial mink and fox ranching, while being only a small contributor to the aggregate farm economy, do represent about 5% of total livestock receipts for the Atlantic provinces. For Canada as a whole, fur receipts increased by $50 million in 1987 as a result of stronger prices and marketings.

Of course, when examining the major factors affecting farm cash receipts in 1987, one cannot ignore the impact of government program payments. Total direct program payouts to producers from federal and provincial government programs increased by almost $1 billion this year to $3.9 billion or about 18% of total cash receipts (Table 2). Of this total, about $3.4 billion contributes directly to farm cash receipts from the Western Grain Stabilization Act, Crop Insurance, dairy supplementary payments, the Agricultural Stabilization Act, provincial income stabilization schemes, and various ad hoc assistance programs, including the $1 billion Special Canadian Grains Program for 1987. The other $500 million in direct program payments in the form of farm input cost rebates (e.g., fuel sales tax, property tax, interest rates) acts to reduce estimated operating expenses. Looking at the provincial distribution of direct program payments, it is clear the major area of support in recent years has been the grain-producing provinces, particularly the Prairie provinces. This support has helped offset to a large extent the drop in market receipts associated with depressed grain prices.

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* Agriculture Canada

FARM EXPENSES

Turning now to farm expenses, which include operating expenditures and depreciation charges, 1987 is expected to represent the second consecutive year of declining farm expenses at the national level (Table 3). This trend to lower production costs is shared by all provinces except Newfoundland, where expenses are projected to increase by more than 6%, and Nova Scotia and Alberta, where marginal increases of less than 1% are expected. Generally, the decline in farm expenses in the other provinces are quite small, with larger reductions of about 5% in Manitoba and Saskatchewan.

A detailed review of the major farm input markets is provided in an article below by Dr. Tom Wise. However, some of the reasons behind the declines in farm expenses for 1987 include lower interest costs, the result of reduced total farm debt and lower average interest rates. Fuel prices, after accounting for tax exemption and rebates, also declined on average, except in Saskatchewan and Alberta. Rental rates for farmland fell in 1987 from the previous year's level as grain prices decreased further. Lower fertilizer prices and utilization rates, particularly in the West, have also helped reduce total farm expenses. The drop in feedgrain prices benefited the livestock sector. However, for those provinces with higher farm expenses in 1987 (e.g., Newfoundland, Nova Scotia, Alberta) a major factor is the higher feed and feeder cattle expenses associated with the increased cattle numbers, the result of a herd rebuilding process.

REALIZED NET FARM INCOME

If we now look at changes to the bottom line, realized net income is basically the difference between cash receipts and farm expenses, although a small adjustment is made to account for the value of farm production consumed on the farm, referred to as income-in-kind. Realized net income being a small residual estimate magnifies by about fivefold the expected changes in receipts or expenses. For 1987, realized net income is projected to rise above 1986 levels in all provinces except Manitoba where net income is expected to drop slightly from a record high 1986 level (Table 4). Large increases in realized net income are expected in the Maritime provinces of Prince Edward Island (15%), Nova Scotia (25%) and New Brunswick (34%) as a result of relatively strong livestock, potato and fruit sectors. Surprisingly, given the depressed grain price situation, a fairly large increase in realized net income is expected in Saskatchewan. This is due to a 15% increase in livestock receipts and large federal program payments to grains and oilseeds producers, which partially offset falling grain market receipts. However, the expected rise in Saskatchewan's realized net farm income of some 36% is from a very low level in 1986.

Actually, this raises a problem common to discussions of farm income estimates and many other statistical analyses for that matter, that of placing absolute or relative changes in the proper context. While it is customary, for example, to compare farm incomes with those of the previous year, a 5% decrease from a record high income level may actually leave producers in a much better financial position than a 5% increase from a record low income level. To place the 1987 income situation in context, it is useful to compare the expected realized net income levels to a historical average. For this presentation, four-year average provincial farm incomes for 1981-84 were chosen, as this was a relatively normal period in terms of commodity prices, production and marketings. In addition for comparison purposes, the effects of inflation were removed by deflating with the Consumer Price Index. Thus, all realized net income estimates are in constant 1981 dollars (Table 5).

The data in Table 5 show that for all provinces save Saskatchewan realized net income in constant dollars is considerably higher than the 1981-84 annual average. This implies most provinces have experienced real growth in aggregate farm income. At the national level, 1987 realized net farm income is about 26% higher than the 1981-84 average when measured in constant 1981 dollars. The largest relative gains in real farm incomes are seen in Ontario (62%), Manitoba (52%) and Nova Scotia (53%). The decline in 1987 real farm income of about 12% in Saskatchewan from the 1981-84 average results primarily from that province's heavy dependance on the depressed grains and oilseeds sector.

To summarize then, whether compared with 1986 levels or with historical averages in constant dollars, 1987 is expected to be a relatively good year for Canadian agriculture in terms of realized net farm income.

FARM FINANCIAL DIFFICULTY

As I mentioned at the outset of this presentation, the favorable aggregate income situation for 1987 has not been sufficient to alleviate or reduce the level of financial difficulty currently being experienced in the industry. The apparent paradox of record high farm incomes and an increasing incidence of farm financial problems is discussed in the article by Brian Perkins regarding the "1987 Farm Income and Finance Situation." He shows that the explanation lies in the fact that these income gains have not been shared equally among commodity sectors, with the grains sector in greatest difficulty, and that the associated problems of excessive debt on some farms and declining land values have contributed significantly to financial difficulties.

Measuring the extent of financial difficulty in the industry is not an easy task. The definition of financial difficulty and the limited availability of data both create problems. The data in Table 6 provide some estimates of the percentage of farm borrowers in serious financial difficulty. Serious difficulty is loosely defined as the situation prevailing when farm operators are at or close to insolvency in the sense of being seriously in arrears with their creditors with little apparent chance of correcting the situation under current circumstances. The unofficial estimates provided in Table 6 were prepared by Agriculture Canada staff from discussions with many agricultural lenders from both commercial and government credit institutions across the country in 1986 and again in 1987.

Without reading too much into the estimates per se, the changes in the estimates between 1986 and 1987 would indicate a slight deterioration in financial conditions overall. Some improvement in the level of financial difficulties was reported in the Atlantic region and in Quebec where producers generally carry less debt per farm and the decline in farmland values in recent years has been less severe.

In the Prairie provinces, where we see the greatest deterioration in financial conditions, producers tend to have more debt on average associated with extensive land-based operations. Moreover, these producers have had to contend with sharp declines in farmland values of 20% to 30% since 1984 as well as reduced market revenues from depressed grain markets.

This concludes my review of the 1987 provincial farm income situation. In the remainder of this article, I will look at some structural or distributional aspects of provincial aggregate farm incomes, using unpublished data recently obtained from the 1986 Census of Agriculture.

FARM INCOME DISTRIBUTION

Using 1986 census data, I would like to show that the Canadian farm sector is made up of a large number of very small farms that produce very little and have very low farm incomes, although many of these producers have substantial off-farm incomes. At the same time, however, there is a significant number of large farms that account for most of the sector's output and have substantial net cash incomes.

Tables 7 through 9 group all census farms (defined as agricultural holdings with $250 or more in sales) into three economic classes based on the value of agricultural sales or farm cash receipts. The smallest economic class includes all census farms with gross sales of up to $25 000 in 1985. The middle-sized economic class includes all census farms with gross sales between $25 000 and $100 000, while the largest class represents all census farms with gross sales in excess of $100 000.

Table 7 indicates that 45% of all farms have sales less than $25 000. This proportion is substantially higher at the two ends of the country, with 62% of Atlantic farms falling into the smallest economic size class and 70% in British Columbia. At the national level, 20% of all farms have gross sales greater than $100 000. The proposition of farms in this largest economic size class is relatively constant at 14% to 23% among provinces.

The data in Table 8 show the distribution of total farm sales or cash receipts among the three economic size classes. The 45% of farms in the smallest size class (an even greater proportion in many provinces) share only about 6% of total farm sales, a markedly constant distribution across all provinces. Conversely, the 20% of farms in the largest size class share almost 70% of total farm sales.

Tables 7 and 8 are presented as background for Table 9, which provides estimates of average net revenue or net cash income by economic sales class. For the first time, the 1986 Census of Agriculture required farmers to report both total sales and total cash operating expenses, which enables us to derive net revenue. Until further analysis of the reliability of these residual net revenue estimates has been completed, it is difficult to be completely confident in the absolute values of net revenue, but the distributional aspects are most likely quite representative. The average net revenue in 1985 for farms in the smallest sales class was negative in all provinces. This means that the average net revenue for more than 130 000 census farms is negative before repayment of debt principal, before any allowance for depreciation, before reinvestment or capital expenditures and before family living expenses. The very low average net revenue estimates for the smallest size class was not overly biased downward by hobby farms with almost no farm sales. In fact, about 40% of the farms in this size class had sales greater than $10 000 and even these farms reported substantially negative net revenues.

For farms in the largest size class with gross sales in excess of $100 000, average net revenue in 1985 was almost $45 000. This largest size class represents about 60 000 census farms. The fact that within the farm sector there are small farms with little farm income and large farms with substantial farm incomes serves to underline what the deputy minister of Agriculture Canada, Mr. Noreau, was saying in his opening remarks at this Conference. He made the point that the structure of Canadian agriculture is highly diverse; with respect to income levels, financial difficulties and concomitant program and policy needs, we must increasingly acknowledge the heterogeneity within the industry.

In concluding this presentation, I would like to reiterate that in terms of net farm income, 1987 appears to be a relatively good year for Canadian agriculture, although this in part is due to government program payments. Moreover, evidence of increasing financial difficulties suggests the aggregate income estimates mask many of the industry's problems. Clearly, part of the explanation can be found in the substantial differences across commodity sectors and related problems of excessive debt and declining farmland values. Additional insight comes with the recognition of the unequal distribution of aggregate farm income among the some 290 000 producers that make up the farm sector.

TABLE 1 CHANGES IN FARM CASH RECEIPTS, 1986 TO 1987

	Value	Proportion
	($ million)	(%)
Newfoundland	2.6	5.8
Prince Edward Island	22.0	11.7
Nova Scotia	19.1	7.6
New Brunswick	19.7	8.7
Quebec	44.6	1.4
Ontario	129.4	2.3
Manitoba	-93.4	-4.5
Saskatchewan	111.4	2.7
Alberta	142.5	3.8
British Columbia	32.0	3.1
Canada	431.1	2.1

TABLE 2 DIRECT PROGRAM PAYMENTS

	1986	1987
	($ million)	
Newfoundland	0.3	0.5
Prince Edward Island	15.3	13.8
Nova Scotia	9.1	11.6
New Brunswick	7.9	8.4
Quebec	433.2	403.5
Ontario	293.4	576.2
Manitoba	254.7	506.2
Saskatchewan	964.7	1 390.0
Alberta	843.4	917.5
British Columbia	96.5	95.5
Canada	2 918.5	3 902.3

TABLE 3 CHANGES IN FARM EXPENSES, 1986 TO 1987

	Value	Proportion
	($ million)	(%)
Newfoundland	2.1	6.5
Prince Edward Island	0.3	-0.2
Nova Scotia	1.6	0.8
New Brunswick	-1.0	-0.7
Quebec	-6.7	-0.3
Ontario	-142.8	-3.4
Manitoba	-73.2	-4.6
Saskatchewan	-168.8	-5.0
Alberta	28.2	0.9
British Columbia	-3.7	-0.5
Canada	-364.7	-2.3

TABLE 4 CHANGES IN REALIZED NET FARM INCOME, 1986 TO 1987

	Value	Proportion
	($ million)	(%)
Newfoundland	0.5	3.7
Prince Edward Island	22.5	50.5
Nova Scotia	18.7	24.5
New Brunswick	20.9	33.5
Quebec	51.2	4.9
Ontario	275.5	19.3
Manitoba	-20.1	-4.0
Saskatchewan	282.1	36.2
Alberta	116.1	15.3
British Columbia	36.0	14.8
Canada	803.3	16.2

TABLE 5 REALIZED NET INCOME

	1981-84	1987
	(millions of 1981 dollars)	
Newfoundland	7	10
Prince Edward Island	43	49
Nova Scotia	45	69
New Brunswick	44	60
Quebec	598	793
Ontario	767	1 239
Manitoba	232	353
Saskatchewan	883	773
Alberta	574	635
British Columbia	126	203
Canada	3 320	4 186

TABLE 6 PROPORTION OF ALL FARM BORROWERS WHO ARE IN SERIOUS FINANCIAL DIFFICULTY

	1986	1987
	(%)	
Atlantic	8.5	5.5
Quebec	3.1	2.3
Ontario	4.8	6.2
Manitoba	6.2	10.2
Saskatchewan	7.7	10.3
Alberta	7.7	9.3
British Columbia	5.4	5.8
Canada	6.1	7.3

TABLE 7 DISTRIBUTION OF FARMS BY SALES CLASS, 1985

	\$250- \$24 999	\$25 000- \$99 999	\$100 000 +
		(%)	
Atlantic	62	20	18
Quebec	44	34	22
Ontario	50	27	23
Manitoba	39	39	22
Saskatchewan	33	50	17
Alberta	45	35	20
British Columbia	70	16	14
Canada	45	35	20

TABLE 8 DISTRIBUTION OF FARM SALES BY SALES CLASS, 1985

	$250– $24 999	$25 000– $99 999	$100 000 +
		(%)	
Atlantic	6	17	77
Quebec	5	27	68
Ontario	5	20	75
Manitoba	5	29	66
Saskatchewan	6	44	50
Alberta	5	25	70
British Columbia	7	14	79
Canada	6	27	67

TABLE 9 AVERAGE NET REVENUE BY SALES CLASS, 1985

	$250– $24 999	$25 000– $99 999	$100 000 +
		($)	
Atlantic	–2 409	6 352	39 265
Quebec	–2 539	13 463	40 656
Ontario	–4 170	8 171	48 267
Manitoba	–2 655	10 231	45 276
Saskatchewan	–2 405	12 324	41 435
Alberta	–5 396	7 699	45 240
British Columbia	–4 627	2 369	52 826
Canada	–3 740	10 109	44 808

FOOD

The U.S. Food Manufacturing Industries: Growth and Structural Change, 1963-85

John Connor[*]

In discussing the longer-term structural changes and growth in the U.S. food processing industries, I address the size and growth of the U.S. industries, look at changes in input usage, consider the industrial organization of the industries and offer some comments on technological change. I also discuss the expected growth in the industry and touch on the internationalization of the industry.

This presentation is excerpted from a forthcoming book that was sponsored by the Institute of Food Technologists. They wanted something that helped describe the industry in terms that nonprofessional economists could understand. The emphasis is on growth and change since about the early 1960s; 1963 was my base year for most of the data sets. This also could serve as a 10-year outlook because I think I have chosen structural changes that are likely to persist for some time into the future. There may be something of managerial interest here in strategic planning for food processors.

INDUSTRY SIZE

The U.S. food processing industries had total shipments of about U.S. $300 billion in 1985, the latest year available. The point here is that, compared with all the other industries, food processing is by far the largest industry of the 20 manufacturing industries in the U.S., far ahead of automobiles, machinery and so forth. However, using the two other common measures of size, employment or value-added, the food manufacturing industry turns out to be about third in size after the electrical and nonelectrical machinery industries; based on employment and value-added, it is third ranking out of 20 of the manufacturing industries. Some economists prefer value-added as a way of comparing industries. Value-added, by the way, is the difference between sales of a firm and all of the purchases made from other companies.

The next fact I want to bring out about the contribution of food manufacturing to the food system is that it has grown in importance. In 1947, food processing represented about 16% of value-added in the entire food system from agriculture to retailing. That has gone up to over 21% in 1982 and has surpassed agriculture sometime around 1980. Food processing is now providing more value to the food system than agriculture itself.

GROWTH OF THE INDUSTRY

Employment has fallen slowly from about 1.7 million employees just after World War II to about 1.5 million employees today, for a 10% decline in the last 22 years. All other growth indicators are positive, however, shipments have quadrupled from 1963 to 1985, from about U.S. $65 billion to U.S. $300 billion. Value-added has risen even faster. The growth in shipments was especially fast from 1972 to 1982, primarily because of inflation. Adjusting for inflation, production went from an index value of 100 in 1963 to 211 for an 111% increase in real output in the last 22 years or an increase in real output of more than 3.5% a year. Because of the difficulty in capturing quality change in production indexes, this may be a bit exaggerated.

There are considerable differences in growth among the various food industries. Of the top 20 food industries in 1985, beef has remained the number-one product class out of about 54 throughout the 1963-85 period. However, a number of industries have moved up in their ranking. For example, the soft drinks industry, which was number two in 1985 was number seven in 1963 and is about to surpass the beef industry in output levels. Other industries that have moved up in rank in terms of shipments are beer, confectionary, frozen specialties, cheese, pet food and snacks. On the other hand, the more traditional foods like bread, milk, flour and sugar have all dropped several slots.

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[*] Purdue University

Production in food processing is driven mainly by household expenditures. About 85% of production goes to satisfy domestic household expenditures. The drop as a percentage of disposable income has all come in the at-home or the grocery store segment, whereas the away-from-home segment has maintained a constant 5% of disposable income throughout the period.

Household demand is driven somewhat by advertising, I think. Food and tobacco products advertising has gone from about U.S. $2 billion in 1963 to about a little over U.S. $8 billion in 1982, a fourfold increase, somewhat higher than sales have increased. Of course, this is just the tip of the iceberg. There are many other forms of promotion that are not included in this figure. I think one of the interesting features though is that food and tobacco products have increased their share of total advertising of all manufactured products. Food and tobacco advertising has gone from a little over one quarter of all advertising in 1963 to almost one third of all advertising of all manufactured products in the United States in 1982. Food and tobacco advertising, always large, is still increasing in the proportion of advertising.

INPUT UTILIZATION

There have been some interesting changes in input utilization over the last 20 or 30 years. In 1977, the cost of agriculture and fisheries products accounted for 28% of sales, while semi-processed products accounted for 17.6%; food products in general accounted for 46% of sales. This is a remarkable change from the situation in 1947 when food and semi-processed inputs accounted for 61%. There has also been a substitution of semi-processed ingredients for raw agricultural products over that time period.

Labor has gone up a bit to 13% now. Capital depletion has gone up and is now accounting for about 10% of shipments. Both of them are a little bit higher, but not much higher, than they were in 1947. Labor and capital costs have been held down as a proportion of shipments. Packaging and containers shows one of the most rapid increases from 4% of shipments in 1947 to over 9% in 1977, more than a doubling in percentage terms. Energy has also increased but it is such a small percentage, 1.5%, that it is almost an insignificant category of cost.

Naturally, this is for the food processing industries as a whole. These ratios will vary considerably across industries. Soybean oil processing is an example of an industry that has very expensive input costs. Labor input is extremely small. It is an extremely labor-extensive and materials-intensive industry. The gross margin is very small in soybean oil processing. By comparison, in bread and cake baking, for example, material inputs account for a little over one third of shipments, labor is a very expensive component, again almost one third of shipments are accounted for by labor costs, and gross margin is correspondingly much higher. Of course, there are even larger differences. Breakfast cereal has a gross margin of over half its shipments. This is a very profitable industry with very small materials inputs and very small labor inputs.

INDUSTRIAL ORGANIZATION

As has happened in Canada, the number of food processing plants in the U.S. has declined quite precipitously from about 37 000 plants in 1963 to 22 000 plants in 1982. Most of that decline has come in the smaller-sized plant categories, and was especially rapid from 1977 to 1982. Although 100 plants a year were being built in the United States, more than 1 000 plants a year closed shop or disappeared from 1977 to 1982. I expect this trend to continue. By the end of the century, I expect we will have only 12 000 to 14 000 plants left in the United States.

The decline in the number of food manufacturing companies has been even faster. On average since the end of World War II, we have had a decline of 3.6% per year in the net number of companies, down to 13 000 to 14 000 companies today. I expect there will only be 9 000 to 10 000 companies remaining by the end of the century. By the way, it is rather interesting to note that the number of companies in the rest of manufacturing has shown an increase. The manufacturing sector as a whole has gone up in the United States, but the number of food processing companies has gone down. It has bucked the general trend of the rest of the manufacturing sector.

The decline in the number of companies has hit certain industries harder than others. Fluid milk, for example, and animal feeds have lost thousands of firms since 1947. These are the so-called local market industries, industries servicing restricted geographical areas. They have lost the greatest number and greatest proportion of food processing companies in the United States. Some other industries have held up fairly well but there are very few industries that show increases. The wine industry is one; frozen foods is another. There have actually been increases in the number of companies in those two industries.

One of the effects of declining company numbers has been increasing concentration of ownership. I have put together some data on all the assets of all food manufacturers. How many of them are owned by the top 50 companies? In 1950, about 36% of total assets in food processing were owned by the top 50 companies. That increased to 42% in 1963. The latest data show that 75% of all assets in 1987 were owned by 50 companies. Projections on any base year and any terminal year in my data set suggested that by the year 2000 90% of the industry will be owned by 50 firms, based on assets. Sales concentration is a bit lower, and value-added concentration is a bit lower still. Assets is the most striking criterion, but the rate of increase is the same for sales or value added or assets.

Another way of looking at concentration, of course, is at the individual market level. In 1963 four-firm concentration on the average in food processing was a little under 40% and almost 50% in 1982 for a 25% increase in 22 years. That is a rather extraordinary rise. By the way, the increases in four-firm concentration have been the largest in the industries doing the heaviest advertising. The industries doing no advertising have actually declined in concentration.

One of the related causes of increased concentration is mergers. Mergers are acquisitions of large food and tobacco companies from the post-war period up through 1980-85. These are confined only to companies with U.S. $10 million in assets or more. These are large companies. The early 1980s period was a period of merger mania, as it is being called, with almost 40 large firms being acquired each year and with the amount of assets being acquired averaging almost U.S. $7 billion. I noticed Canadian companies were making some acquisitions in the United States. The figure of U.S. $140-150 million was mentioned, which is a very small proportion of total merger activity in the United States.

One of the motives for mergers is the remarkably high and steady profits enjoyed by food manufacturing companies. Food and tobacco companies' net profits after taxes divided by stock holders' equity has risen from the 12% range to the 16% range in recent years. Since 1979 or 1980, food manufacturer's profits have been considerably higher than the rest of manufacturing. The profits of manufacturing dropped during the recession period. Food manufacturing profits managed to largely withstand declines in general economic activity.

TECHNOLOGICAL CHANGE

About 1200 American food companies have some sort of R & D program; about 200 of them have separate laboratories, so they have a significant investment in research and development. Research and development expenditures are close to U.S. $900 million a year, a fairly substantial figure and seven times what it was back in 1963, when it was U.S. $130 million. While there was a substantial increase in R & D, the ratio of R & D to sales is quite miserable. It is 0.4% throughout this entire period. That makes food processing the very lowest ranking of all the manufacturing industries. It is not a high-tech industry as measured by this R & D/sales ratio. However, recent research has emphasized the importance of interindustry transfers of technology. Not all the technology used must be developed within the firm or industry. Technologies developed by food manufacturers often have applications in the plastics industry, for example. Some recent studies have looked at interindustry transfers of technology and these turn out to be very important for the food industry. It turns out that a little over half of research and development technology used by the food industries is being imported from other industries, and the food industries are exporting a small proportion of what they use; they are large importers or users of technology developed in the machinery industries, chemical industries, and so forth.

Investment in new plants and equipment in the food manufacturing industries is averaging about U.S. $6 to U.S. $7 billion a year in the United States in current years. This has resulted in fairly impressive labor productivity increases. Growth in labor productivity has been running at about 3% a year, which is better than for the rest of the manufacturing sector. Food processing looks pretty good by this measure. However, a recent study done by a colleague of mine at Cornell University has looked not only at labor productivity but also at productivity measured against energy and capital use as well; it is called total or multi-factor productivity. This has been well under 1% a year, which is pretty slow, since the 1958-63 period. Considering the large increases in capital and energy that are now required in the food industry, it appears that productivity increases are very modest, averaging less than 1% a year. However, that has not stopped the industry from spewing forth a great deal of new products. Since 1964, we have been getting about 500 new processed food products per year. By the way, this is a very conservative count; it does not include color differences or package differences; these are genuinely new products according to one fairly reliable source. By 1985 there were 1500 new processed food products being introduced annually in the United States markets, a very substantial increase, but a rather ambiguous measure of technological progress.

EXPECTED GROWTH

What sort of growth is expected in the food industries? About 85% of all output is sold to domestic consumers, which is the principal source of growth. A recent USDA study I find quite reliable took into consideration income changes as well as demographic changes and predicted into the far future that growth in food at home will be in the range of 1% to as high as 1.4% or 1.5% a year in terms of real expenditures. Growth in food away from home is a bit higher but not very much higher. Income accounts for one quarter to one half of what is driving this increase in demand, but the rest is due to demographic changes, including increases in population, changes in the racial, regional and age characteristics of the population in the United States. So rather slow but steady growth is again expected in the future.

INTERNATIONALIZATION OF U.S. FOOD PROCESSING INDUSTRIES

I want to talk a bit about internationalization of the food processing industries. Many people regard the U.S. industry as quite insulated from international impacts through trade and investment. It is probably still true in the case of trade; U.S. industry is largely insulated from trade and does not participate much in trade, but it does invest heavily abroad. There are growing concerns about the trade deficit in the United States. About a year ago, an article in the *Wall Street Journal* decried the decreasing net exports in the food processing industries. According to this article, exports led imports up until 1983 or 1984 and then we had a net deficit in processed food products. Since I was not sure I believed these numbers, I dug into the data a little more deeply and put together my own numbers, which show that in the early 1970s there was a net trade deficit in processed foods of about U.S. $3 billion and that this deficit has slowly decreased. I think the lessons from these figures is that a lot depends on what base year you choose and what definition.

As for increases in foreign direct investment by U.S. companies and foreign direct investment into the U.S. by foreign residents, the rates of increase are very substantial. They have risen much faster than sales or assets of the U.S. manufacturing industry. But there was a sharp break from that pattern in 1980 or 1981; the latter year was the first year in which investment into the United States exceeded investment flowing out of the United States and the gap seems to be closing rather quickly. It remains to be seen what will happen in future years with regard to all manufacturing industries.

I have put together some similar figures for food manufacturing and some other components of the food system. The manufacturing industry is quite internationalized, with almost 20% of its assets abroad outside of the United States, Canada and western Europe primarily and a little bit in Latin America. Food manufacturing is a little bit on the low side but still 14% to 16% of all assets of food manufacturers in the United States are held outside the U.S. There have been big increases in grocery stores, eating places and wholesale, but these industries are still at a lower level. Internationalization in food manufacturing does not seem to be moving anywhere, according to these data.

The main point here is that the amount of investment out of the United States has been increasing in food manufacturing but it has been overtaken by investment into the United States in 1984. Since 1984 more food manufacturing assets have been held by foreigners in the United States than have been held by U.S. companies abroad, a rather substantial shift in the historical pattern but one that had been coming for many years.

Food Processing

*Don Jarvis**

The food and beverage processing sector, the industry I represent, as in the U.S., is Canada's largest manufacturing activity and provides direct employment for more than 200 000 Canadians. This industry in Canada is currently undergoing some major changes.

FREE TRADE

Of course, the most profound event facing our industry in Canada is free trade. This brings us to the question of the free trade deal with the U.S. and its impact on the future structure of our food industry here. We know that the deal retains most of the nontariff barriers protecting Canadian-regulated agricultural commodities. But it does not correspondingly exempt packaged grocery and food products. All tariffs on grocery products will begin to be phased out January 1, 1989. In some cases, tariffs will be gone in five years, but on most food products by 1998.

Since Grocery Products Manufacturers of Canada became involved with the free trade issue over two years ago, we have learned from two surveys of our members, presidents and CEOs that we cannot speak with one voice either for or against the free trade matter and honestly represent the membership. Frankly, some members see this as a great opportunity and these are the people who make the investment decisions. Others are convinced that free trade will result in serious job reductions in our industry.

The one issue where there is unanimity among the membership relates to regulated agricultural commodities in Canada. Even those of our members who are very much in favor of free trade are concerned with the uncertainty that currently exists regarding regulated commodities. Many of our members are ready to compete as long as we have a level playing field. We have worked diligently to make everyone, especially the government, aware of the very specific concerns in our industry, but we have been very careful not to get involved in the emotional debate that sometimes tends to become oversimplified.

Frankly, even with competitive costs on currently regulated commodities, I do not think that our industry will unanimously embrace free trade but I can tell you that, if we do not get competitive costs, there will be many who will face serious decisions soon regarding employment, capital investment and the future of the food processing industry in Canada. Our greatest concern centers on the availability of input commodities like poultry, eggs, milk, wheat and flour and fruits and vegetables to Canadian food processors at prices no higher than those paid by our competitors in the U.S, if there is to be freer trade between the two countries. We need to support our farmers but we also need open market prices for grocery product manufacturers. The government simply has to find a way soon of supporting farmers that does not obstruct the competitive abilities of Canadian manufacturers. Many people here in Ottawa and in the provincial capitals are working on that very hard right now. Canadian manufacturers must be able to compete in our own domestic market with our American counterparts and therefore must not be forced to pay significantly more for agricultural ingredients. How these fundamental problems of two-price wheat, national supply management marketing boards and provincial marketing boards are addressed and how soon will play a significant role in the future structure of this industry.

ECONOMIC AND TECHNOLOGICAL FORCES

What about other economic and technological forces facing the industry? Zero population growth has eroded profit margins a little bit and there are no longer high levels of inflation to provide artificial increases in profit dollars. So how has the industry responded to that change?

First of all, companies looked to mergers and acquisitions to contribute to an improved bottom line; and we saw that demonstrated very ably with the U.S. data. I know the Canadian data would mirror that. Mergers and acquisitions provide opportunities for economies of scale, product compatability and other operational synergies.

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* Vice-President, Grocery Products Manufacturers of Canada.

They also provide the greater financial resources to adopt new technology and market new products. I expect that rationalization will continue in Canada at the same pace we have witnessed over the last five years.

Secondly, the industry is looking at improved computer software and capabilities. For example, some companies can now have their computer talk directly to their supplier's or customer's computer to place orders or submit invoices. This electronic data interchange can eliminate the need for a lot of employee-produced paperwork. These kinds of efficiencies can translate into savings for the company, which ultimately translates into benefits for the consumer.

Dramatic developments in food science and technology will also have a profound impact. A new study just published on the future of the European food industries found the following features. The technologies in Europe that will have a major impact by the year 2000 are seen by the industry as being process automation, biotechnology in the agricultural sector, process design, microelectronics, new packaging materials and concepts, biotechnology specific to the food industry, gas-modified atmosphere packaging, aseptic processing, microwave or radio frequency heating, extrusion cooking, new sensors and mathematical modeling. Another trend is consumption of what can be termed "fresh chilled foods" will nearly double in Europe by the year 2000, while consumption of frozen foods will rise by some 25%. In contrast, canned foods are forecast to decline by some 25%. Employment levels in the EEC food industry are forecast to decline by 25% by the year 2000 as a direct result of scientific and technical development. In Europe, irradiation is forecast to have a major impact by the year 2000, particularly in the areas of microbiological control, sterilization of packaging material, increasing shelf life of fresh produce and pest control in commodities and raw materials. No doubt, these developments in some way will be mirrored here in North America.

CONSUMERS

Now what about the people who keep all of us in business and also influence changes to our industry and structure? What about our consumers? This year GPMC initiated a semiannual consumer research study that looks at shopping behavior and how consumers view the grocery industry. Our findings provide some clues to change occurring in the industry. We found that Canadian consumers are very concerned about freshness of the produce they purchase and when planning meals. A second study now under way will give us more information about what consumers really mean by freshness, particularly as it relates to the grocery store.

Nutrition is another important concern. It is interesting to see that fresh products were often perceived to be more nutritious than canned.

It is important to remember also that the lifestyles of many consumers mean that time is a precious commodity; therefore convenience becomes an issue, and partially prepared or easily prepared products are more attractive and are gaining in the market place. Increasingly, we are seeing prepared but not processed vegetables. A number of stores now carry an assortment of ready-to-cook vegetables that have been cleaned, washed and cut, can be purchased by the kilo and are turning into national brands.

Over 50% of respondents in our survey sample said they owned a microwave oven. This was surprising and is the kind of information that manufacturers are acting on to provide microwaveable products and microwave instructions on packages. Recognizable brand names are important to consumers when they are shopping and this is a consumer trend that we at GPMC hope to see continue.

When planning meals, consumers are concerned about the use of agricultural pesticides as they are about the use of preservatives and additives Only fat, sugar, taste and freshness were of more concern. Finally, information on the nutritional value of foods and the way in which a product fits into a healthy diet is of extreme interest to consumers.

THE FUTURE

When we look out into the future and do some star gazing about what is going to be coming, I think we will be seeing a lot more information being allowed on product packages. We will see nutrition information, health claims for disease prevention, point-of-purchase fliers and shelf tags that give you more information than you ever had about the products you are buying. We will see the Cuisine Machine, a computer-linked video. The Cuisine Machine dispenses information on the selection, storage and preparation of foods. It will print recipes, nutrition information and cooking instructions to shoppers on request. I understand that Soby Stores in the Maritimes are the first Canadian users of this equipment. We will see the Nutrition Wizard, a software package for personal computers that analyzes your diet, menus, recipes and the nutritional content of common foods.

The consumer of the future may be buying products made with olestra. Olestra is a noncaloric fat substitute, the first of its kind. This product has been developed by Proctor and Gamble and is currently undergoing the extensive review required by the Health Protection Branch. We will also see products with sucralose, a noncaloric sweetener. The advantage of sucralose over the existing sweetener, aspartame, is that sucralose can be used in baked products. So you may soon be seeing extremely low-calorie cakes, cookies and donuts where both the fat and the sugar have been replaced with substitutes. Just think of the impact in the marketplace of those types of developments.

Biotechnology is a growing science and one that may affect agriculture a great deal. Future consumers may be buying fresh produce that has never been exposed to pesticides because it comes from a disease-resistant plant. A joint venture between Nabisco and Bio-Technica, which is a small biotechnology company, shows that plant gene splicing is actually close to coming of age. They are trying to genetically engineer fruits and vegetables with better taste, longer shelf life and other desirable characteristics. And how about seedless green peppers, bananas with more protein or even pineapples with stawberry color and flavor? On the livestock side, there could be an enormous impact in meat and poultry. This could raise unique regulatory questions when genetically engineered chickens are marketed for human consumption.

New products, of course, will certainly include dairy by-products. The yoghurt market is growing enormously, with yoghurt drinks, frozen yoghurt, low fat, fruit-filled flavored yoghurt. Variety grain products are adding the fibre that is lacking from diets. We will see more designer produce, high-quality baby vegetables and more variety. We will see increasing popularity for healthy, mobile, long-life snacks and for cadillac desserts. These are rich, high-calorie desserts, part of the stint-and-splurge mentality that buys generic juice, but also chocolate mousse cake, or eats nutritiously all week in order to indulge in gourmet meals on the weekend.

But in all of this, there is one thing we must not lose sight of: people do not eat food only for nutrition. People choose the foods they eat for comfort, entertainment, to be in style and, of course, for plain old good taste. For example, people will pay almost anything for a really good product.

SUMMARY

In summary, the food industry is an industry in the midst of change. The free trade agreement with the U.S. will result in changes that may or may not be beneficial to the agri-food chain in its entirety. Changes in the economic climate are resulting in changes to the structure of the industry. Technology is affecting change. Consumer lifestyles and concerns are leading Canadian manufacturers toward new products that reflect the emphasis on freshness and nutrition, products that are convenient and microwaveable, and products consumers believe are safe. The amount and content of information on food products is in the process of change and some of the ingredients themselves are changing dramatically and will continue to change as new technologies develop.

Coping with these changes is a challenge facing the companies that now make up our industry. The ones that adjust will be the survivors and, as consumer demands evolve, so must the products that manufacturers process and the ingredients that agriculture produces. They will need to be flexible, responsive and innovative. It is going to be an interesting future for all of us involved in the industry.

Food Retailing

*Jacques Auger**

My presentation is on the very important subject of food distribution, and will focus on the various factors affecting the evolution of our industry and will highlight some of the initiatives put forward by our members in order to deal with the ever-changing environment.

Over the past 10 years, the Canadian food distribution industry has gone through a number of profound changes that led to its consolidation and integration. The end result of this long period of transformation is today's strong, efficient, competitive and healthy food distribution industry. It is my firm belief that such a transformation was unavoidable and necessary in order to ensure the survival of our industry, which was faced with an increasing level of complexity and sophistication and had to cope with constantly rising costs. The consolidation and integration of our industry has tapered off in recent years to give place to diversification in nonfood retail activities such as restaurants, sports equipment retail outlets, drug stores, etc. Concurrently with this modification of our corporate structure, we have also witnessed important changes to the demand side of our traditional food distribution sector.

THE COMPETITIVE ENVIRONMENT

The purchase of grocery items is the biggest single cash expenditure per household in Canada, and this is probably true in the United States as well. In 1987 the total cash register sales in grocery stores in Canada totaled over $35 billion, representing more than twice what it was 10 years ago. In short, Canadians spent an average of $3 783 in 1987 on food and grocery per household.

The food retailing business has always been a very competitive one and one where efficiency and productivity was an essential ingredient to success. Today's competitive environment is getting even more complex and comes to us not only from within the food distribution industry in the form of store format, retailing approach, controlled labels, service offered, but also from nonfood retailers such as drug stores and other nonfood retail outlets, which are offering an increasing amount of grocery items. Consumer habits are changing and more people eat more of their meals outside of their homes on a regular basis. Therefore, food retailers are competing with restaurants to get their fair share of the consumer's food intake. Canadians eat one meal out of three outside their home. Based on 1986 figures, restaurant sales amounting to $13 billion represented 29% of the combined sales of food stores and retaurants. In 1981, food sales in drugstores accounted for virtually nothing, whereas in 1986 they accounted for 2% of the total food retailing sales in Canada or approximately $720 million.

THE EVER-CHANGING CONSUMER

Food retailers have always monitored the ever-changing and evolving consumer's needs and wants. They have witnessed and adapted to the changing taste of their customers by offering new and higher-quality products. Canadians are becoming more conscious of what they eat, which has a direct effect on the breakdown of food-at-home expenditures. To illustrate this, let us take for example the meat share of food expenditures, which dropped significantly from 37.3% in 1974 to 32.7% in 1984. Conversely, dairy products have increased from 13.7% in 1974 to 16.3% in 1984. Fruits and vegetables increased from 15.7% to 18.4% over the same period. Of course, we have to say that the increase in vegetable consumption has been accompanied by a reduction of canned vegetable consumption to the benefit of fresh and frozen vegetables. As for meat consumption, there has been a clear shift away from red meats over the past 10 years. In fact, beef consumption has been gradually replaced by white meat, primarily chicken and turkey, which are considered by consumers to be healthier meat.

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* President and Chief Executive Officer, Canadian Council of Grocery Distributors

In order to better understand the expectations of the consumers, most of our members rely extensively on market surveys they carry out on a regular basis. The results of these surveys vary greatly from region to region and from province to province, and are influenced by such factors as age group, educational background and income level of the population surveyed. Nonetheless, there seems to be one conclusion, which is borne out by a great majority of consumers regardless of their age or background. The primary consideration in the customer's choice of a food retail outlet is the quality and variety of basic food such as meat, produce and other essentials. This is followed by such items as the quality of service, the speed at the checkout counter, the location of the stores, weekly specials, etc., in that order, according to the most recent data we possess.

It is difficult for anyone to generalize with regard to any of these parameters as the findings may vary considerably in relation to age group, income level, education level, geographical area, etc. Therefore distributors, producers and suppliers alike have to adapt their respective marketing strategy and product line to the particular needs of a given region or province. The days of a single, uniform provincial or national marketing strategy seem to be bygone.

Notwithstanding the fact that our environment is in constant evolution, one has also to take into account that changes are happening at an ever-increasing speed. Therefore our members have to be prepared to act quickly in adapting to change. Let us now look at some of our members' initiatives in dealing with our changing environment.

THE DISTRIBUTORS' RESPONSE

Retailers are constantly opening new stores and refurbishing older ones in order to adapt to consumer preferences, consumer mix in a given geographical area or to the need to expand in order to house new services or a new line of products. The trend in food store size appears to be in the further segmentation of store format, which has already led to the introduction of new store formats such as the superstores or the combo-stores. For example, the number of superstores increased by almost 50% this year over last year's level with 21 new stores opened up between September 1986 and September 1987. Currently, the 66 superstores in existence in Canada represent 7% of the food retail market. During the same period, the number of convenience stores has also increased by 3% from the level a year ago to 2 737 stores in September 1987, which account for 5% of the total Canadian grocery sales.

In this area of constant evolution, it seems that store appearance plays a very important role in attracting customers. Not so long ago, experts would have agreed that on average stores should be modernized every 7 to 10 years. This is not true today and it is more common to see store owners proceed with major renovation programs every three to five years. To highlight the importance of having modern food stores, let me share with you the results of a major renovation program undertaken by one of our members. The program was sponsored by a major chain and was offered to all of its members. Some 115 stores were renovated over a period of one year. The stores that had substantial renovation programs (i.e., $250 000 or more) showed in the following year an average growth factor double the average of the stores that had chosen to spend smaller amounts of money (i.e., less than $250 000). When we are talking about double, we are not talking about small numbers. The stores that had spent more than $250 000 experienced a growth of 20% in their sales whereas the latter experienced growth of 10%. It is also noteworthy that the ones that had not renovated showed no growth or very little growth.

Another service offered to consumers by food distributors and retailers is the controlled label products. Controlled labels is another way for food distributors to offer the consumer custom tailored, higher-quality products and overall a better value for their dollar. The generic label or no-name label push of the 1980s has given way to a steady growth in company's exclusive private labels. For example, in Ontario generic label share of the total controlled labels has remained the same between 1985 and 1987, whereas the private label share has grown by more than 12%, which I think is very significant.

Consumers are also now used to finding an increasing number of services adjacent to or within the food retail outlets. The most popular of these new services have been in-store delis, hot take-home food, on-premise bakeries and snack bars. We have also witnessed the opening of small shops and boutiques within and adjacent to the larger stores to offer customers additional services such as film processing, dry cleaning, video tape rentals, flower shops, etc. The advent of the combined food and drug store concept has also contributed to offering the consumers additional service so that much of their food and related needs are satisfied at one single location.

As you can see by the previous examples, one has to constantly adapt to change in order to survive. This is particularly true in the food distribution world where competition is fierce, consumers rightfully demanding and profit margins very thin.

THE INDUSTRY'S FUTURE

Considering the theme of this conference, I would be remiss not to draw from the experience of my members in order to try to forecast what will be the future of our industry, or at least what will be the most influential factors for us in the years to come. I will therefore conclude this presentation by sharing with you my views on what will be the main elements of change that will impact on our industry in the short-to-medium term.

First, I do not see any reasons or signs for competition to lessen in our industry as the market growth rate levels off and as distributors' appetite for an ever-growing market share does not diminish.

Second, the integration and consolidation of our industry will continue to taper off as distributors' attention is focused on diversification to other retail sectors.

Third, competition from nonfood retailers selling an increasing number of grocery items will continue to be a preoccupying factor for our members.

The advent of freer trade with the United States should open up new sources of supply for wholesalers, which in turn should have a good effect on the price of products and consequently should mean lower prices to consumers.

We should also witness in the years to come greater segmentation of food store formats, which will give rise to new store formats better adapted to markets.

Consumer needs and wants will continue to evolve and will do so at an even greater pace than before. This evolution will be influenced by several factors of which the following are, I believe, typical of what we will see in the near future:

- Because there are more and more people traveling the world and developing new tastes, there will be a need for food suppliers and also food distributors to adapt to these evolving and changing tastes.
- The influx of new immigrants creates demands for new products on the one hand and eventually exerts some influence on other consumers to diversify their diet. That also will have an impact on our business.
- There are a growing number of households where husband and wife are both working outside the home and therefore have very little time to cook. This will create an additional demand for new items such as ready-to-eat food, precooked items, microwaveable dishes, etc.
- The trend toward what is perceived as healthier food will continue, giving rise to an increased demand for white meat, fish, dairy products, fresh fruits and vegetables. There is also the element of a potential shift to higher-value items driven by the higher disposable income that exists in Canadian households.

Considering these numerous parameters affecting change, the distributor has to be alert in determining the needs and wants of the consumers through market research and consumer behavior studies in order to be in a position to react quickly to change and demand so as to maintain and increase his market share. He also has to be innovative in bringing into his stores new features, new services and new products that will make him different from his competition and allow him to grow and become more efficient to the benefit of Canadian consumers.

Foodservice

*Douglas Needham**

Foodservice today is Canada's most dynamic industry. This sector of the economy employs more Canadians than automobile manufacturing, oil refining and pulp and paper combined and is the industry the government of Canada projects to be the fastest-growing employer between now and 1995. It is an industry that defines the Canadian lifestyle better than any other and is an industry that is crying out for employees of every type: skilled, unskilled, and managerial. People tend to think of the restaurant industry as small business, and few outside of the industry recognize its true size. In fact, the restaurant industry has become one of the largest sectors of Canada's economy, with $20 billion in sales in 1986 through 50 000 businesses with 630 000 employees, 5.2% of gross domestic product and 4.9% of the Canadian labor force.

FACTORS AFFECTING INDUSTRY GROWTH

The real story is not the size of the industry, but how quickly it grew, from $1.4 billion in 1966 to $20 billion in 1986, and what caused this rapid growth. The factors are many and include changes in Canadian lifestyles, legislative changes and economic changes.

Probably the single greatest factor stimulating the growth in foodservice has been the increasing participation of women in the work force. Working women have changed traditional family roles. Women do not have time to produce the family meals seven days a week. But by working they give the family more income, enabling them to eat out or order in.

Single family households are the second greatest stimulus to dining out. Cooking for one is inefficient and dining alone is lonely. It is more comforting and more interesting to eat in a busy restaurant, even if you are alone.

Higher education has a direct relationship on dining out. For whatever reason, consumer studies show the higher the education the greater the dining out frequency and Canadians are among the best educated in the world.

The desire for new sensory experiences has influenced many industries, such as travel and recreation. Canadians have become more adventuresome and are much more willing to try new experiences. In 20 years we have come from a meat-and-potatoes society to one based on pasta, seafood and ethnic foods. If it is new and exotic, Canadians will try it.

Our society has also become a very busy and hectic place to live. The time demands of work, recreation and family have stimulated the need for convenient, quick-service foods that are easy to obtain and fast to eat.

Changes in Canadian legislation have also had a major impact on the restaurant industry, with relaxation of liquor laws being a turning point in expansion. In 1947, the Silver Rail in Toronto became the first restaurant to get a liquor licence in Ontario. Before that liquor licences were a privilege requiring the sale of rooms in hotels or rooming houses and the right political connections. Governments' growing interest in the promotion of tourism has also spurred the development of restaurants.

Of course, Canadians have more money to spend on dining out. The combination of two incomes and the rising status of women in the corporate world are factors contributing to a higher level of disposable family income. As a result, Canadians have become more imaginative and spontaneous in their spending habits, stimulating foodservice growth.

Increases in corporate travel and the increased amount of leisure travel available to Canadians has meant more exposure to different lifestyles. Once considered a luxury or necessity when traveling, dining out has become a reason for traveling and good restaurants have become destination points.

Franchising has allowed the rapid expansion of good food concepts. By attracting small entrepreneurs willing to invest in and manage foodservice outlets, the franchising phenomenon has swept many industries, including travel, real estate and retail establishments, but the biggest single franchise sector has been foodservice from donuts to yoghurt to fried chicken. Systemization has permitted the growth of chains, enabling them to maintain a minimum standard of food, facility and service. Systemization has worked extraordinarily well in fast foods leading to chain domination in this particular sector, but systemization of full-service restaurants remains elusive; and we are still awaiting the national chain which can systemize the variety of skills required to turn a full-service restaurant.

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* Executive Vice-President, Canadian Restaurant and Foodservice Association.

Now all of these factors have been very good to the foodservice industry but not so good to the traditional retailer marketing food for home consumption. If you consider these two groups as competitors for the Canadian food dollar, you will see a major loss of market share by the grocery business. In 23 years the foodservice industry has almost doubled its share of the food dollar from 18% in 1963 to 35.5% in 1986.

STRUCTURE OF THE FOODSERVICE INDUSTRY

Now, briefly, I would like to look at the eight sectors in our industry in order to give you an insight into the complexity of what is a very diverse industry.

The first and largest sector is liquor-licenced restaurants, representing 29.6% of our industry sales or $5.8 billion in 1986. This sector of the industry is typified by independent full-service operations, with the average being 71% sales in food and 29% in alcoholic beverages.

The second largest sector is unlicenced restaurants, representing $3.7 billion in sales or 18.7% of the industry. This sector is dominated by fast food operators led by the national chains. These fast food or quick service, as they prefer to call themselves, feature limited menus specializing in specific foods such as burgers, chicken and pizzas.

The third largest sector is institutional foodservice, representing $3.1 billion or 16% of the foodservice industry. We call this the phantom sector because it is quite large but invisible to most people, representing prepared meals sold in schools, hospitals, prisons, factories and retirement homes.

The fourth largest sector is accommodation foodservice, which is prepared meals sold in hotels, motels and resorts, representing $2.8 billion or 14.1% of industry sales. Sales in this sector of the industry are directly related to the occupancy rates as well as to the corporate and leisure travel markets.

The fifth largest sector is the take-out market, which also includes home delivery. Sales in 1986 were $1.5 billion or 7.7% of the industry. It is very similar to the fast food sector with limited menu items offering consumers convenience at low prices, and it appeals to those people who want the convenience of a prepared meal.

Sales in taverns are predominantly alcohol, but there is a growing emphasis on foodservice, particularly for finger foods like chicken wings and nachos. Taverns represent $900 million in industry sales or 4.8% of the market.

Catering consists of contract caterers who are hired by institutions, factories and offices to provide prepared meals. The catering sector is the same size as taverns, with $900 million or 4.8% of industry sales.

The foodservice industry must compete not only with other restaurants within its sector but also with convenience stores and grocery stores who have realized that take-out can be a profitable business. This sector represents 1.5% of the market or $300 million; it is quite small but is growing very quickly.

INDUSTRY OUTLOOK

Now, if we are going to predict the performance of the foodservice industry, we have to understand the economic factors that influence its behavior in the short term. Not surprisingly, our data show that the performance of the economy has a close relationship with the performance of the foodservice industry. Indeed, there was a very close relationship in the period 1981 to 1986, although in recent months we have seen real industry growth exceed the gross domestic product for the first time since the 1970s. We feel confident in saying that where the economy goes, so goes the foodservice industry.

Within sectors, however, there is an interesting divergence that is directly related to the economy. In the past seven years, we have noticed that liquor-licensed, full-service restaurants do better when the economy is strong. When the economy is weak, unlicensed, primarily quick service restaurants tend to do better. We call this phenomenon trading up and trading down, and we believe that this makes a strong statement about Canadian lifestyles. Dining out has become an integral part of our way of life. When times are good we spend more of our disposable income in fancy restaurants and when times are bad, we continue to eat out but we trade down to less-expensive convenience restaurants.

We have also looked at the impact of unemployment, but concluded that there was no direct relationship to foodservice sales. Although sales did suffer badly in 1982, they bounced back very quickly. By comparison, unemployment peaked in 1983 and has declined very slowly, as you are all aware, I am very sure. Looking at 1982, we have concluded that the economic shock and the uncertainty, but not unemployment, were the primary sales depressants in that year.

The biggest challenge confronting Canada's foodservice industry today is the shortage of workers, from unskilled to skilled and management. The problem has been most severe in southern Ontario where the economy has been hottest for the last few years, but we anticipate that this problem will spread across Canada to most major urban centres in the coming years. Part of the problem is the rapid growth of the foodservice industry. Between 1987 and 1995, Employment and Immigration Canada projects that employment in the foodservice industry will grow by 25% from 600 000 people today to 750 000 in 1995. Demand for all foodservice occupations will rise dramatically, but our biggest concern exists among the chefs and cooks who require skilled training and among managers who require a combination of education and experience. If you have children looking for a career, I would like to have their names and addresses.

The future of our industry holds a good-news, bad-news scenario. The good news is the rapid growth among mature, higher-income consumers. In the next decade the number of Canadians aged 35 to 64 will increase by 22.5%, which is good news for restaurant operators. But over the same period the number of youth aged 20 to 34, our primary labor market, will decline in absolute numbers by 7.6%. The growth of the prime restaurant market is on a collision course with the declining number of young workers. Many of our members are already experiencing the nightmare of this labor shortage.

Part of this problem has been created and could be solved by immigration. Traditionally, our industry has relied on immigrants to fill both the highly skilled jobs and the entry-level jobs. Theoretically, the government opens the doors to immigration when times are good and closes them when times are bad. But in recent years that principle has not prevailed and many chains have had to curtail unit openings for lack of help. At CRFSA we have identified the labor shortage as one of the key challenges and issues confronting our industry in the next decade and we are developing programs, investing funds and lobbying the government in a multi-faceted program designed to help our members surmount this very serious problem.

TAX REFORM

Tax reform brings two major concerns to our industry. We think that the lowering of personal tax returns is a positive factor that should be good for most businesses, but we are concerned that the government has selected certain industries such as foodservice to pay the cost of lowering everyone else's tax rates.

Phase 1 of the tax reform includes a limit on the deduction of business meals from 100% to 80%. Now, at a quick glance, that does not sound like a lot but it does represent a 27% increase in the after-tax cost of business meals. The greatest impact of this tax will be felt in full-service fine dining restaurants, which is the weakest and least profitable sector of the industry.

Reduced deductibility is just stage one of the tax reform. Stage two is a new 8% to 10% tax on restaurant sales and other retail sales, which can only worsen the situation. In the long run, we are very concerned that the government will try to lower the 80% limit in future federal budgets. In the United States there are already proposals to lower the limit to 50%. What is 80% today will probably be 60% tomorrow and ultimately 0% as it is in Australia. The loss of deductibility for business meals in 1986 in Australia reduced restaurant sales by $280 million in that country and cost the industry 10 500 jobs. Finer restaurants have been devastated, with many closing at lunch because of a lack of business.

Our industry will have difficulty supporting upscale restaurants for foreign tourists visiting Canada if they are crippled by the loss of corporate meals, which is the bread and butter for these finer dining establishments.

Phase 2 of the tax reform is the new sales tax I mentioned earlier. As proposed by Finance Minister Michael Wilson, it will be a combination of the existing provincial sales tax with a new federal sales tax. As most of you are probably aware, Mr. Wilson recently announced that the sales tax will not apply to food. What we have not heard about is the definition of food. There seems to be a natural assumption that groceries are a necessity while foodservices are a luxury. But is it fair that the rich can buy pâté tax free while your child pays sales tax on a school cafeteria lunch?

Both the supermarket and the foodservice industry are locked in a battle for market share, and the tactics include convenience and price. As the competition for the food dollar increases, both grocery stores and department stores are offering salad bars and are prepared meals for ready-to-eat home consumption. Some grocery stores have deli counters that offer daily lunch specials in addition to fast foods items. And salad bars are located in neighborhood grocery stores that specialize in milk, bread, cigarettes and candy. I suggest to you that there is no discernible difference between a pizza sold in your local supermarket and a pizza delivered to your door. One takes 20 minutes to deliver, the other takes 20 minutes to cook.

FREE TRADE

One issue we are frequently asked about is the impact of free trade in the restaurant industry. Generally speaking, we believe that the impact will be modest but positive. Anything that encourages competition among suppliers is good for our business. The restaurant industry has always had to compete in a very vicious marketplace. We do not have quotas, price support, supply management or subsidies. We are fascinated, however, by the implication of free trade on the food processors as well as the so-called exempted marketing boards. When American companies start shipping processed dairy products and poultry products across the border, we suspect that Canadian marketing boards will be forced to lower their prices accordingly or see their market among Canadian processors disappear because they cannot compete.

Extensive provincial and federal legislation governing the supply and distribution and cost of alcoholic beverages in Canada has made the restaurant industry less competitive in the world tourism market and has contributed to Canada's high-price image. Canadian governments have consistently taxed alcoholic beverages at extraordinary rates, ignoring or downplaying its impact on tourism. Unfortunately, they do not have to answer to the irate American tourist who pays twice as much for a bottle of French wine in Canada and believes he is being ripped off. Nor do they operate a restaurant in a border community where Canadians can slip across the bridge and enjoy an inexpensive evening in a U.S. restaurant.

SUMMARY

In summary then, I would like to identify a few specific trends that will influence our industry and yours in the coming year:

- Convenience will continue to be a strong stimulus for dining out.
- Women are in the work force to stay. Pregnancy means a temporary absence from the job rather than a permanent departure.
- Consumers will place a greater emphasis on quality in all restaurant types.
- Canadians' growing appreciation of value for money will become more important for every foodservice sector from fine cuisine to quick service.
- Menus will become simpler and change with greater frequency.
- The popularity of fresh foods and daily specials are forcing operators to simplify their menus and modify them on a regular basis.
- Many motels and restaurants are photocopying or mimeographing their menus daily while others are making use of blackboards. Increasingly, consumers are accepting these basic menus and equate simplicity with freshness.
- Baking, broiling and steaming will increase in popularity as cooking methods. Consumers are becoming more concerned with how their food is cooked as well as what food they are eating.
- Frying is losing popularity while broiling, baking and steaming get the nod.
- Pasta and seafood will continue to dominate restaurant menus. The trend toward nutrition, health and white meats will continue as consumers order pasta and seafood over red meat.
- White, light and fresh foods will attract more customers. Freshness and lightness are in and will show continued popularity.

- Consumers are increasingly concerned with nutrition and health and this trend will continue strongly into the foreseeable future. As a result, lighter foods such as fish and salads and smaller portions will be more appealing to the public.

- Exotic foods will continue to attract more adventuresome diners. Exotic foods such as venison, buffalo, boar and elk are attracting new customers and additional varieties of fish such as eel and orange rouffie are being offered by restaurants catering to the sophisticated tastes of Canadian diners. Our experiences gained through international travel and our expanding ethnic mix means that Canadian customers are more willing to taste exotic varieties of food.

- And, finally, wine will continue to be the only alcoholic beverage with growth potential. There is a growing interest on the part of consumers to learn more about wines. Sugar content alone is insufficient for today's informed consumers. The region in which the grape originated, the year it was grown, and the opportunity to sample fine wines by the glass are expected by a growing number of Canadian restaurant patrons.

THE FAMILY FARM AND THE FUTURE OF CANADIAN AGRICULTURE

Opening Remarks

*Honourable John Wise**

When one thinks of the Outlook Conference, one sometimes thinks strictly in terms of economic forecasts and discussions about farm finances. While the farm and food sector is vital to the Canadian economy, we should never lose sight of the fact that people make their homes on farms.

Farming is both a business and a way of life. You cannot separate one from another. The economic well-being of the business certainly influences the quality of life for the family who runs it. Some 99% of the farms in Canada are family-run operations.

Just three weeks ago, my department released the Family Farm Forum report. This report can best be described as a dialogue. It is farm families across Canada telling us directly what matters most to them. They talked about economic issues, including the state of farm finances, production costs and farm debt. They also talked about other issues such as farm safety, the transfer of farms between generations and environmental concerns.

The seed for Family Farm Forum was planted about two years ago at the Second National Farm Women's Conference in Prince Edward Island. Farm women said the government's agenda should not deal exclusively with the dollars-and-cents side of farming, but that we must also address the social issues.

The first step was to ask Canadian farm families what issues they considered to be important. The response was overwhelming; there were more than 7000 replies to our questionnaires from across the country.

The Family Farm Forum report provides a clear picture of the issues that confront us. I would like to note that many of these same issues have been front and center at recent forums. I am referring to the National Farm Women's Conference in Saskatoon and provincial meetings of farm women in Quebec and Manitoba.

In the family farm, there has been a traditional partnership between husband and wife. While farm wives have always contributed to the farm enterprise, this was seen in the past as simply an extension of their household responsibilities. As agriculture has evolved over the last few decades, so have women's roles in farming. Many women now farm alongside their husbands and other family members as full and equal partners in the family enterprise. Some women are the sole operators of their farms.

These changing roles extend beyond the farm gate. Women are participating in increasing numbers in the industry's decision-making process, and women are rightfully assuming leadership roles in agriculture.

Agriculture Canada has recently adopted a Farm Women's Consultation Policy to involve farm women's groups in industry issues. This process will occur at the same time, the same level and for the same purpose that my department consults with multi-commodity groups. This new policy will help strengthen the role of farm women's organizations as stepping stones to more active participation of farm women in mainstream organizations.

One of the Outlook Conference's special sessions features expert speakers, several of whom are women. Many of the people involved in the discussions will be women. I think that this is a positive indication that times are changing.

Women are achieving recognition for their contributions to the agricultural sector. They are participating in this vital consensus-building process that is shaping this government's agenda for agriculture.

I have been looking forward to these conference proceedings. I think we will be getting more important feedback about how the partners in agriculture view the future of farming in this country and the family farm's place in that future.

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* Minister of Agriculture

How do you interpret the Family Farm Forum report? Where do you think we should go from here? That is the challenge I am presenting. We have begun an important dialogue with Family Farm Forum. I am anxious for it to continue.

We will be using our findings from the Family Farm Forum to help evaluate and guide government programs and policies. The release of this report is a solid beginning. But there is much work that lies ahead.

We will continue to involve farm families, farm organizations and governments in a process to identify practical and meaningful steps to ensure that the family farm has an important place in the future of Canadian agriculture. Family Farm Forum can have a crucial role in this work.

Agricultural Prospects and the Family Farm

*Clay Switzer**

In discussing the agricultural prospects for Canada and the future of our family farms, we have to evaluate the industry from the farmer's point of view. In a poll conducted by Reid Polling, Canadian farmers were asked to assess the agricultural situation. The poll was conducted during summer 1987, and revealed that the attitudes of Canadian farmers toward the future of the family farm is not bright.

According to the poll, more than one third of Canadian farmers think their financial situation compares poorly with that of the population as a whole. Only one quarter of Canadian farmers expect to make money this crop year. Only one half think they will just break even, and one fifth expect their operation to lose money this year. Furthermore, one quarter of Canadian farmers say it is likely they will have to shut down their operation within a few years if there is no improvement in the economic situation. Prairie farmers and those who produce grain or a cash crop are the most pessimistic about their future prospects.

Our next step is to examine why farmers have these views. As I see it, the farming industry is subject to internal and external influences. Most of this decade has meant substantial change in the economic and social forces governing the agri-food industry. Some of these influences have never been experienced before.

First and foremost among the external influences are international government subsidization programs for agriculture, which have succeeded in disrupting the natural patterns of supply and demand in the marketplace. As well, we have witnessed a green revolution in countries that were once dependent on imported food. Now more and more, these countries are becoming exporters of products they once imported. Unfortunately the global glut of certain commodities and the domestic policies of the developed nations have limited the trade opportunities for those new exporters.

Recent studies indicate that economic growth in such developing nations will increase their demand for higher-valued food and beverage products of the developed nations. As well, research establishments in genetics and biotechnology are augmenting programs in conventional crop and livestock improvement in the race to remain competitive in the world market. Agricultural schools and research institutes are receiving more attention and funding in both developed and developing nations as a means of sustaining a viable agri-food industry.

Internal influences have subjected Canadian farmers to high interest rates and heavy debt loads for some time now. The cost of inputs necessary to the farming operation has increased while the farm gate profits for their commodities have decreased.

An interesting development over the ten years between 1976 and 1986 is the decrease in the number of farms in Canada. In 1976, a census of Canadian farms showed there were 338 578 farms in operation. By 1986, the number had decreased to 293 089 farms. Yet, at the same time, the average acreage per Canadian farm went from 499 acres in 1976 to 572 acres in 1986. As the farms got fewer, they got bigger, and so did their production and sales. Between 1976 and 1981, farms earning less than $2 500 dropped by 36%, while farms earning more than $100 000 in the same period grew by 178%. And the trend continues. Between 1981 and 1986, the farms earning $100 000 or more grew by an additional 30.9% and the smaller farms earning $2 500 decreased by a further 29.9%.

Who then are running these bigger farms? Happily, they are still in the hands of individual farmers. Almost 85% of Canadian farms are owned by individuals, with partnerships and corporations making up the difference.

However, there is a gradual decrease in individual farming operations. One reason for this attrition can be attributed to recent economic difficulties facing agriculture. This has discouraged young people from taking up farming. As well, there appears to be a lack of interest in farming as a career choice.

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* Deputy Minister, Ontario Ministry of Agriculture and Food

Enrolment in agricultural colleges across Canada has declined. In Ontario there has been a 30% decline in the number of students enrolled in Bachelor of Science agriculture programs between 1976 and 1986. Enrolment in diploma programs in agriculture show a decrease of 1% over the same period.

This shortage of new farmers is further illustrated by the fact that less than 2% of the farmers in Ontario are under 25 years of age. Saskatchewan does not fare much better, with 4% of their farmers being under the age of 25. Farmers aged 25 to 34 years represent 14% and 20% of farmers in Ontario and Saskatchewan respectively.

With our population growing older and with a shortage of new farmers, the individual or family farm is in danger of extinction. What then are the general prospects for Canadian agriculture?

In the short term, I see a need for financial support to keep the industry competitive. Governments must be able to provide a "safety net" to assist the agriculture community against adverse economic and natural influences. In the longer term, as a nation based on an agricultural foundation, we have to ensure our ability to compete with any other nations involved in grain production and with those in certain other market niches, such as horticulture. In both the long and short term, the industry has to have contingency plans for adversity, insurances and a solid resource base.

A number of factors can influence the prospects of the industry. Among them are weather, the protection and preservation of our soil and water resources, education, adaptation of new technology and research. Although there is little that can be done against adverse weather conditions, insurances such as crop insurance, are a necessary safety net in the industry. More and more we are seeing a heightened awareness in the preservation and protection of agricultural lands. The notion of land stewardship means the adoption of new methods of erosion, soil degradation, and water and soil resource management.

A related extension of this effort toward land stewardship is the reduced use of pesticide in agricultural production. Aside from its purpose of protecting the agricultural resource base from chemical pollution, reduced pesticide application reduces the cost of production. This cost-saving feature can provide a leading edge in marketplace competition and at the same time can fulfill the consumer preference and demand for safe, quality food.

However, any shift away from traditional farming practices and methodology will have to be supported by educational programs. The farmer of tomorrow must become considerably more educated than today's farmer. As it is, we are seeking more and more agriculture degrees and diplomas on the farm. As agribusiness becomes more competitive, the farmer will be required to act as a highly trained professional. The farmer will have to have expertise in management, risk assessment, marketing, production, labor and technology awareness. Continuing research will play a pivotal role in helping the farm of tomorrow to compete. Advances in biotechnology, pest management, genetics and other farm-related technologies has shown Canada's research system to be as good as that of any other country's. If we can keep it that way, we should be able to retain our competitiveness.

As much as these advances in technology and methodologies are revolutionizing the business of agriculture, the traditional family farm is undergoing change. The single family farm as we know it may rapidly become a thing of the past. The farmer who raised a family on the farm was secure in the knowledge that the family farm would either be passed on to his children, or that his grown offspring would begin farming on a tract of land "just down the road." The whole rural environment is changing. We are seeing an increase in part-time farmers who have sources of income away from agriculture. More nonfarming urbanites are living in rural areas. With this increasing encroachment on the rural lifestyle, comes more pressure on the farmer to curb normal farming practices. The noise and odor commonly accepted with farming now comes under common nuisance laws pressed by nonfarming neighbors.

The rights of the farmer to continue traditional practices will have to be protected. As well, the growth of populations in urban centers, and the resulting spread of urban development is threatening the availability of agricultural land. The mix of the farming and nonfarming population is impacting on the rural fabric. The rural church, for example, was at one point the provider of social services, catering to a fairly homogenous group.

Over the coming years there will be a need for nontraditional social services such as day care, help with caring for the elderly and the disabled, and various kinds of social counseling. Social services can even mean the construction of new facilities such as parks and sports centers. There will be a need for cooperative effort among different jurisdictions such as ministries of Community and Social Services, Municipal Affairs and Recreation. It means we will have to consider the role of government agriculture ministries in maintaining a balance between economic and social concerns in the rural community.

Part of this need for new social services stems from the changing role of women on the farm. Today, close to 5% of farms are run by women, and I expect to see this increase, following the trends in other business occupations. The traditional husband-and-wife team, once relegated to specific farm duties, are now equal partners. The old conception of the family farm now requires new definition. Given these changes to the family farm and the business of farming itself, how can we assist?

I believe our biggest challenge in this area is and will remain keeping people on the farm. It is not only a question of making it financially possible, but also a question of providing an environment in which people will want to farm. I see an immediate need to improve the morale of the farming community. Through the evolution of high-tech industry and the rise of urban centers, farming has been left by the wayside. Farming, as the cornerstone of our history, tradition and economy, has been passed over in favor of the pursuit of "modern life."

The nonfarming public, which is 96% of the population, must be educated on the importance of agriculture, its economic significance, and the family farm as its foundation. We can say there is a need to bring dignity back to the profession.

To maintain a future agriculture industry, programs of education and financial assistance to beginning farmers are a necessity. Policies for the preservation of agricultural land will ensure a resource base for the industry. These policies of resource management will have to be supported by financial programs to assist the farmer in technology transfer. Governments and industry will have to work together to identify new markets and to pursue them. The old perception of the consumer as a defined homogeneous market no longer applies. Today's consumer profile is fragmented by such things as changing lifestyle patterns and an aging population with specific needs. The consumer's increased exposure to international cuisines has created a more educated and demanding palate and subsequently a distinct marketing niche. And the concern over food quality and safety means a new market to be penetrated.

Likewise, agriculture groups and associations, along with governments, will have to develop plans for overall competitiveness. The Ontario Ministry of Agriculture and Food developed a strategy for the industry based on four key points: competitiveness, financial stability, education and research, and soil and water management. While each pillar of the strategy addresses a particular area, they are interrelated. Competitiveness in the marketplace cannot be achieved without a financially sound industry. A financially stable industry cannot hope to exist without the technology and expertise to produce quality food for consumers. And food production ultimately depends on the health of soil and water resources.

Finally, what does the future hold for the family farm? Permit me to do some crystal ball gazing. I believe the family farm, in the broader context, will continue to dominate Canadian agriculture. In the relatively short term to the year 2000, farm inputs will continue to increase in size and more managerial and less labor inputs will be required for the successful farmer. I believe we will continue to see most food produced on family farms, but they will be much larger farms. They will in fact support three or four families, all operating the farm as a family corporation. I think it is likely that a brother might specialize in crop production, the sister specializing in farm and financial management, and perhaps a cousin in on-farm technology. The structure of the farm will change with a mix of commercial farming of a wider variety of crops and livestock.

At the same time we will see an increase in rented land for farming, small farms and part-time farms. It is very likely that part-time farmers, using modern technology, will produce more in the future on their small farms than was produced by the previous occupant who often was a full-time farmer. These smaller-scale operations will contribute significantly to the local food supply. They will also account for an upswing in direct sales to consumers.

Farming will continue to be highly capitalized and mechanized. I cannot see people being any more willing to pick peaches or clean barns than they are now, so mechanization will increase. There will be a downsizing on the mechanical side of the industry. More power will be built into smaller machines. We see evidence of this trend in the success of farm machinery manufacturers that have concentrated on applying new technology, such as microprocessors, into new equipment. More and more we will see computerization come to the farm. Crop yields, pesticide use, fertilizer applications, are rapidly becoming computerized. We will also see a need for quick information dissemination. Access to fast-breaking commodity market reports will assist the farmer in deciding when to harvest, sell and make projections for the coming years.

There are many changes facing the family farm in Canada. Given those changes, should we be pessimistic or optimistic of its future?

Although we cannot predict the future, I am optimistic that advances in technology and continued research and development will provide answers for the farmer of tomorrow. I am greatly encouraged by the increasing acceptance of the notion of land stewardship, and the heightened concern for the social and human resource elements of the agricultural community. I am optimistic that the family farm will continue to be the cornerstone of the Canadian agriculture industry and that we have the resources and expertise to adapt to those changes.

The Family Farm: Stresses and Strategies

*Norah Keating**

INTRODUCTION

The issue of stresses in the farm family suggests that there is a concern about the well-being of people in farming. It also presumes that the concern is not only for those people who are designated as farm operators but also for the group of people who collectively are involved in running farm operations.

One of the sources of this concern comes from the fact that the number of people employed directly in agricultural production and hence of those who are part of a rural culture is declining. The result is that many farmers as well as other rural dwellers are experiencing serious personal losses. There has been such concern about this trend that this period is being referred to as a "farm crisis" (Hayes 1986).

But what are we worried about? Some have argued that these losses ought to be thought of as merely a transition to a more efficient, modern form of production. If so, the farm crisis should be seen as a temporary emergency that can be dealt with by providing transition assistance to those who desperately need it. However, for some people the term "farm crisis" denotes something much more fundamental, a reevaluation of "the type of agricultural production units we want, the type of rural communities we want and, in general, what we want the countryside to look like" (Hayes 1986, 1).

The very existence of the Family Farm Forum suggests that there is support for the second definition of the farm crisis. If we are looking at some undesirable changes that threaten the loss of valued institutions, then we need to look at what economic and social goals we want to pursue when we develop agricultural policy and what are the best ways to achieve those goals.

It is within this broad context of the social and economic implications of changes in agriculture that I will address the issue of stresses and strategies regarding the family farm. In this presentation, I will restrict my remarks to three areas in which farm families have the potential for stress. These are in the family-business interface, in personal and financial stress and in retirement. The list is not exhaustive but is chosen for several reasons. The family-business interface was chosen because it illustrates the special nature of the way in which rural communities are organized. Stress and retirement were high on the list of what were called noneconomic issues listed by people who responded to the Family Farm Forum and have been of longstanding concern to those dealing with the farm crisis.

STRESSOR 1: THE FAMILY-BUSINESS INTERFACE

A family business has been defined as one in which the majority ownership or control lies within a single family and in which two or more family members are involved in the business (Rosenblatt et al 1985). Families who responded to the Family Farm Forum survey added an additional item; that is, they also provided the labor. A common estimate is that more than 90% of all businesses in North America fall within this definition.

Often thought of as mixed, subsistence operations, most farms in Canada probably fit the above definition of family businesses. I say "probably" since to my knowledge we do not know how many business partners are related to one another. Since family businesses face different stresses from those facing nonfamily operations, this is a significant gap in our knowledge. Nonetheless, from a small amount of research and from the Family Farm Forum, it seems reasonable to assume that a significant proportion of farm operations are run by people who are related to one another. These operations are both big and small, successful and not. Family farms are no more marginal to the farming community than the Eaton family stores are to the business community. Their loss is not something to be taken lightly.

Family-run businesses have special assets and liabilities not part of nonfamily operations. The presumed assets of farm family businesses are part of the folklore of our culture. The family farm is seen as a symbol of a way of rural life marked by egalitarian values, cooperation and mutual support. For some who are concerned about the erosion of this tradition, the family farm has been deemed the whooping crane of the North American economic scene (Hedley 1981), highly valued, rare and worthy of protection. In sharp contrast to this view is that the family farm is less a whooping crane than a dinosaur, an anachronism in an era of agribusinesses and corporate farming.

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Whether whooping crane or dinosaur, farmers are among those with the highest rates of stress-related illness (Smith, Colligan and Hurrell 1977). One of the sources of stress lies in the fact that the same people are part of a family and are business partners, and both happen at the same place. Tensions in such operations arise because family and business cycles result in conflicting needs that cannot be met simultaneously in both sectors. For example, beginning farm operations often have high debt ratios and labor requirements (Keating, Doherty, and Munro 1987). Yet beginning farm families have children too young to contribute to the operation, high labor demands in caring for children and the requirement for one or both partners to have off-farm jobs to support the family and the operation. Despite the fact that their family expenditures are lower than those of older families (Wilson 1987), investment of both time and money in the household is often foregone for investment in the business.

Good family decisions and good business decisions are not always one and the same.

There seem to be at least two different ways in which farm families work out these tensions (Salamon and Davis-Brown 1986). One group that seems to epitomize the traditional family farm has a great deal of carry-over from family to business. These farmers define agricultural success by family farm continuity from generation to generation and use low-risk financial practices to meet their goal. Their management strategies include limiting operational expansion to family needs, utilizing family and farm resources and supporting intergenerational succession. In contrast, the second type define success as the optimization of financial returns and personal achievement. They farm larger, specialized operations, expand by calculated risk taking and are limited only by available capital. Using a more entrepreneurial model, they cannot and do not assume family assistance for enterprise establishment, succession or development.

Is the latter group the model for the modern successful business? Is it the one that will rise from the ashes of the downsizing of agriculture? Some of the work we have been conducting at the University of Alberta (Keating and Selles 1987) suggests that in difficult economic times it may actually be the family farmer who not only survives but also flourishes. Financial conservatism, family cooperation and modest farm goals contribute more to farm continuity in uncertain economic conditions than do risk-taking entrepreneurial expansions for short-run profit optimization. The family-model farm is market oriented but based on maximizing kin involvement and avoiding financial resource expenditures for hired labor, costly domestic or equipment investments, and acquired debt. The key to the success of this type of operation lies in the high value on farming as a way of life and on land ownership.

Yet although the enterprise costs of the family model approach may be low, the personal costs are high. All members of the family must be willing to live modestly in order to achieve those goals and to allow enterprise needs to take priority over household needs. And when those in the family model do overextend themselves and lose the farm, they may suffer most because they have lost not only a business but also a family legacy.

STRESSOR 2: PERSONAL AND FINANCIAL STRESS

It has been estimated that 20% of farm families are under such severe financial stress that they are currently unable to service their debts (Harl 1985). Much of the analysis of this situation has been of the market economy, although characteristics of the farm family also influence both the size of the debt load and the amount of stress felt by people carrying high debt loads.

Younger operators have the highest debt loads. A recent farm survey in Alberta showed that owners of high-equity units had been in the business an average of 29 years, whereas owners of low-equity units had been in operation an average of 14 years. This is another example of the double whammy of high business demands and high family demands occurring at the same time. Despite high debts, most young families have limited time, money and labor resources to contribute to the business.

Farm couples with high debt loads are also most likely to have off-farm jobs that bring in income but reduce the amount of time for both business and family. In this context I find the term "part-time farming" to be invidious. From the data we have on numbers of hours worked by farmers, it seems clear that for many people part-time farming requires full-time work on the farm, at an off-farm job and in the household. Only a superfarmer would consider that kind of regime as part-time.

Who are the people who feel the most tension over financial problems in the operation? They are those who are unsatisfied with farming as a business, who work long hours but worry that they are not working enough, and who have low off-farm income. Such people are in a cycle that we have called the futility factor. The need to generate additional income to reduce high debt loads leads farm families to allocate their time and money in a particular way. Off-farm employment is taken on to service debt loads and family members work long hours on the farm. If farmers are putting all of their available time into the business and still have a high debt load, stress concerning that debt is high.

What is surprising to us is that we have not found debt load to have a strong influence on stress. This seems in sharp contrast to media headlines and general perceptions that the source of the problems facing rural families is economic. Here is another example of how an integration of economic and social can lead to more understanding. For example, although it can be calculated in absolute amounts or ratios, debt has very different meanings for farmers. Entrepreneurial farmers, described earlier, see debt loads as part of the risk of doing business. For others, the way of life is worth the costs. For only some are high debt loads as negative as we presume.

We also know some things about the stress resistant farm men and women (for further discussion, see Keating 1987a, 1987b, and Keating, Doherty and Munro 1986). The best buffer is a sense of mastery or being in control of one's life. For farm men and women who feel self-confident and who expect to solve problems successfully, stress reactions are not as severe, regardless of the problem. In addition the stress-resistant farm man sees his farm work as his primary job, even if he works off the farm. He is committed to farming and is confident about the future.

The sources of stress for farm women are not entirely the same as those of farm men. Although a strong sense of mastery is also first for women, acknowledgement of their farm work contributions is next. Despite a certain amount of rhetoric to the contrary, there is still little public recognition of women's farm work. If you spend your life building a business, it is important to have your contributions recognized.

STRESSOR 3: BUSINESS TRANSFER

The movement from one generation to the next has been cited as one of the most agonizing experiences in any business, especially those that are family owned and operated (Barnes and Hershon 1976). Farms are five times more likely than other family businesses to be passed from generation to generation (Laband and Lentz 1983). Though difficult, generational transfer has been the cornerstone of continuity in farming. The cliché that the only way to become a farmer is to "marry one or bury one" is based in more than a modicum of truth. Our research and the response to the Family Farm Forum show that, although most farm families still want to bring members of the next generation into the business, their strategies and resources often mean that this goal is not achieved.

For farmers, retirement is a long-term process of withdrawal from work, management and ownership (Keating 1987). This withdrawal starts with transfer of some of the farm work load, often when farmers are in their fifties. This is the beginning of retirement where some work may be done by adolescent children or where the work load of the operation is modified by reducing labor-intensive aspects such as livestock. The second phase of retirement is moving out of management. Farmers reduce their control over production and marketing decisions before they pass along financial decisions. Finally, land is transferred. The stresses lie in how this process is undertaken and who is available to take on the business.

The effectiveness of retirement requires the availability of offspring willing and able to take on the business, sufficient assets to support two or more families during the process and the willingness of members of the older generation to give up control. The way in which the older members of the family deal with retirement, can and will have a powerful impact on farm continuity.

The ordering of retirement makes perfect sense when seen from the perspective of the older farmer. First, begin to give up part of the heavy work load. This allows children to gain experience in the operation and relieves the farmer of the day-to-day grind. It may mean no reduction in control over the business. In fact, it may give the farmer more time to take part in management decisions.

Second, give up management. We have found that farmers pass along short-term management decisions about production and marketing before they pass along long-term decisions such as financing of the operation. As one farmer at this stage said to me, "You know you are retired when you tell the boys to do something and they do not do it."

Finally, give up ownership. Many farmers consider themselves retired even if they have complete ownership of the business.

This analysis is not intended to make farmers look like a selfish lot who are happy to pass along the work to their children but who want to maintain the power to the end. However, it is not difficult to see where there could be intergenerational tensions if this is the way retirement works. Retirement is a major issue for all members of farm operations.

STRATEGIES

What strategies should we use to deal with the farm crisis? First, let us commit ourselves to a model of agriculture which has as its basis the assumption that farming is a system in which social and economic factors are an integral part and are not two separate sets of issues. This will allow us to explore the impact of the economy on the ways in which farm families manage their operations. It will also allow us to better understand why some families make very different economic decisions based on such things as the importance placed on family continuity of the operation. This will require a shift away from what has been called "salami science" whereby an area of enquiry is cut into the thinnest possible slices. Integration of this sort is no mean feat, but I think is vital if we are to have the broadest possible vision for working through the farm crisis.

Second, let us assume that the farm family is the unit of analysis for farm operations and that, by virtue of being part of that household, adult members and many younger members are part of the farm operation. This would eliminate such anomalies as counting women as farmers only by default through widowhood or singlehood and men as farmers by virtue of being males living on farms. It would encourage a broad look at how the work of all members is allocated in formal and informal economic activities and would make the way for more accurate assessment of the contributions of both the visible and invisible farmers. This strategy at the very least would require the inclusion of questions on the farm census about all of the people who run the business.

Third, let us assume that the family farm is neither a whooping crane nor a dinosaur but is likely to continue to be the primary form of farm businesses. Let us then identify points in business and family cycles that are likely to be stressful so that farm organizations and agricultural specialists can provide informed interventions. For example, at different phases of retirement, farm families might benefit first from programs on managing intergenerational relationships and second from information on estate planning. It is difficult for an older farmer to do good estate planning if he does not talk to his children about who, if anyone, will take over the business and if he worries that, if he transfers property, a divorce of one of his children will force sale of the farm.

Finally, let us take a closer look at those operations that are successful even in these difficult economic times. These farms may be the basis for the rural communities of the next generation. Let us look further at how they define their success. How much is economic viability; how much attachment to the land; how much a sense of mastery over their lives; and how much the ability of a group of people to live and work in harmony?

Not only does the changing farm scale affect the quality of farm family life, but also the ways in which farm families deal with the farm crisis will affect the economic viability of agriculture. I look forward to the challenge of dealing with the interaction between the two.

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Women in Agriculture

*Dorothy Middleton**

The current farm women's movement started in 1975, some 30 miles from here in Winchester, when Women for the Survival of Agriculture was founded. WSA is a self-help group, based on the idea that, when people who share common problems get together, they can share their experiences, knowledge, strengths and hope. Our members are ordinary people who want to do something positive for families in farming. They have the courage to take a stand, a sense of commitment and a large amount of caring.

It seems timely that we look at what has taken place over the last decade, because the action of the "new breed" of farm women's groups has been significant. We all know that the most difficult change to make is attitudinal change, yet attitudes toward farm women and farm women's attitudes about themselves have made a tremendous leap forward. Seldom do we hear the phrase "just a farm wife" and rightly so; after all, we married our husbands, not the farm. Now we are recognized and referred to as either farm women or equal farm partners. Have you also noticed that the farm gate signs now usually name the couple or the whole family? Gone is much of the traditional father-and-son identity.

There have been three National Farm Women's conferences in the last decade: the first was in Ottawa in 1980; the second in Prince Edward Island in 1985; and the third was in Saskatoon last month. The planning has already started for a New Brunswick conference that will take place in two years and a conference in Quebec in four years.

There have been conferences and seminars for farm women in every province across Canada. At least a dozen research projects have focused specifically on farm women's issues. Federal legislation was changed in 1981 to enable farm women to declare a wage from their farm business and also to allow them to contribute to Canada Pension Plan and to the Quebec Pension Plan for the first time.

In the same year, changes were made in some of the lending policies of the Farm Credit Corporation. These changes eliminated some of the discrimination against farm women who are equal legal partners or are independent farmers in their own right.

Women are taking their rightful place in traditional farm organizations and their leadership is being recognized, accepted and appreciated. For example, Brigit Pyke was recently elected by acclamation as president of the Ontario Federation of Agriculture for a second term. She is the first woman to hold this position.

Portrayal of farm women in the media has changed from tokenism to a positive and sometimes exclusive focus. After publishing a number of research papers on subjects that concerned us, the professional research network became interested and excited about farm women. Now we are studied, surveyed, interviewed, and reported on, across the country and even beyond our borders. The most recent work "Growing Strong: Women in Agriculture" has just been released by the Canadian Advisory Council on the Status of Women. It examines the legal, economic and social status of farm women as well as the economic contribution of women to Canadian agriculture. The next study to watch for is "Work Smarter, Not Harder," a discussion paper produced under contract with Agriculture Canada, which looks at the continuing education and skills training needs of Canadian farm women. It is scheduled for release early in 1988.

Federal legislation has been changed to allow farm women to claim their advance grain payments. Alice Brown, a farmer in Alberta, championed that change. Also, federal legislation has been changed to allow women who are legal partners to qualify for capital gains tax exemption, thus increasing the possible number of exemptions per family. This means that at least we are being recognized as independent economic entities by our federal government, although the same cannot be said for some of the provincial governments.

Farm women are moving up front and are receiving their share of the rewards for farm management accomplishments for dedicated service to the farm community. They are also gaining some positions on boards, task forces, committees and advisory councils. Hard-won services such as rural child care or shelters for rural victims of family abuse are emerging across Canada. Agriculture in the classroom has become a reality in many areas because farm women get a goal of "agricultural literacy throughout the educational system." Public relations projects such as Agri-Food Week, spearheaded by farm women, have become annual events in many areas. New groups specifically for farm women have been established across the country. With their emergence, we now have a dynamic national farm women's network developing.

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* President, Women for the Survival of Agriculture

Where are we now? Farm women are on the move.

We are farmers, ranchers, growers and business administrators. We are an emerging force. We are rejuvenating our skills, experiencing personal growth and increasing self-esteem while at the same time promoting and enhancing agriculture, the foundation of this nation's economy.

Where do we want to go? What are our goals?

We want full economic equality for Canadian farm women.

What does that mean in practical terms? It means: access to security; access to education and training; access to the benefits of government programs; access to positions on the boards and commissions and thus the decision making and advisory bodies of our industry; and access to a good quality of life for the farm family.

Let us go back and have a look at each of these a little closer. Access to security is complex. It can mean that farm women are paid wage earners and are no longer required to donate their time and talents to consumers. Too long have we had a cheap food policy in this country that has endured because of the unpaid labor of farm women and farm children. Access to security can also mean that farm women are recognized in legal terms for their labor and financial contributions into the farm business. How? By legalizing the relationships that exits.

Let me give an example. In the study "What are you worth" eastern Ontario farm women were found to be responsible for 47% of the farm work and, if all the tasks and hours were costed out at an average area wage, their worth would be $922.80 per week. This input into agriculture must be recognized. The few women who receive any kind of wage from the farm business declare that it amounts to about 25 cents to $1 an hour. Who else in the Canadian marketplace would work for such a pittance?

In the Family Farm Forum, the importance of the role of women was ranked fourth in importance of noneconomic issues. It was a concern of 80% of the men and 90% of the women. However, to get financial recognition, we must start with the farmers themselves. They must understand the business structure in which they are involved and the necessity for the security of formalization of that structure. The 1986 census shows that only 4% of all partnerships were reported as legalized.

While preparing a discussion paper on the training needs of Canadian farm women, WSA has found that there is definite confusion in the farming community. Like most women who are a part of a business relationship, farm women think they are secure. They think they are legal partners. They live under the delusion of a false security. For example, some of the terms they used to describe their farm business for our survey were far from legal. They wrote descriptions such as "loose partnership," "Traditional Family Farm," "regular farm" "family arrangement" and "husband-and-wife team." On reading these, we felt that more information was needed immediately. Remember, these were the leaders, so one can only imagine what the rest of the farm community believes. We set about to do something concerning the problem. We gathered a team of professionals and published an easily read step-by-step guide to farm partnerships called "Cover Your Assets." We took one step but more are needed.

That brings us to better access to education and skills training. Some 20% of the farm women who responded to our survey felt that they were totally cut off from both information about, and the ability to attend, all education courses. This isolation occurred because of money for tuition fees, transporation costs, and costs of replacement labor, because of distance, which is often complicated by barriers like mountains, large bodies of water, miles upon miles of lonely road and our famous Canadian winters.

Time was nother facotr. With the increase in the responsibilites of the Canadian farm women and because of the economic situation in farming today, leaving the farm for any period of time for any reason other than to make money was a real problem. In essence we were told that we must find ways of bringing information to the farm.

A great deal of time, money, and energy is spent reinventing the wheel as educators in each of the provinces start from scratch to set up farm courses. Often, according to our survey, these courses do not reflect the rapid changes in our industry.

One solution to this problem would be to have a national clearing house for agricultural information and resources where all providers, including universities, colleges, agricultural organizations, agribusiness and farm women's groups, could contribute and in turn build on what was already been accomplished. We need a commitment on the part of government to reach out to those who live more than an hour away from course providers. We need a commitment that will provide the financial, human and technical resources necessary to make courses as available as video-taped sporting events or beauty pageants. We need a commitment from federal and provincial governments to consult closely with our farm leaders when setting up programs like the Canadian Jobs Strategy and Ontario Skills Development so that we are not again faced with the devastating effects of a change of policy.

In 1985, the Canadian Jobs Strategy program policy implementation caused serious problems. In Ontario alone, we lost all funding for 210 farm business mangement courses, which were wiped off the slates of five colleges of agricultural technology. Remember, this happened in a time of agricultural crisis when farm business management was a critical element in the preservation of our farms.

Let us move on to the benefits of government programs. Canadian Jobs Strategy criteria for the job entry-reentry program does not adequately serve the farming community. It is the program that is targeted to women entering the work force. One of the criteria states that the woman must be out of the work force for three years. Let us consider a cash crop farmer who needs to work off the farm. Is she in or out of the work force? When I questioned this, I was told not to worry because farm women would not be considered part of the work force, but rather would be considered unemployed.

If we accept this, we are saying that farm women do not contribute to agriculture and do not add to the Candin economy. If we do not accept this, there is no program to help farm women who are not on social assistance or are not bankrupt to enter the work force. Is this what our government really intended for us?

This must be rectified by either changes to the present criteria or a new program targeted to this sector of the economy. We definitely need better access to the benefits of all government programs. This will require an attitudianal change of some of our provincial governments. In Ontario, for example, there is a court case pending on the constitutionality of criteria that found a person ineligible for a beginning farmers assistance program on the grounds of marital status. The Ontario government has since brought out new programs. The criteria? Now you cannot live in the same principal residence. When I pointed out to an official that, in interfamily transfers, many beginning farmers live in the main farm house during the first tough years of large debt, he painstakingly pointed out to me that in some cases, if the other partner sleeps on the opposite side of the house, that person could be considered eligible. Now, really!

However, praise must be given where praise is due. The federal government definitely deserves credit for the changes that have been made to recognize the economic equality of women. As I mentioned, the Advance Payment for Grain is no longer withheld from farmers who are married to their partners. The capital gains exemption recognizes all legal partners, with no mention of marital status.

This attitude needs to prevail at all levels of government. Change is necessary so that the legality of a business partnership is recognized and marital status no longer is used, covertly or overtly, as criteria for accessing government programs.

Some lending institutions such as the FCC have also changed their policies to stop discrimination toward women. However, these changes only become fact when the attitudes of the front-line people change. This unfortunately takes more time than changing words or pictures on forms.

Numerous farm women from across the country have said to us that they still have problems because farming is seen by many to be an industy of brawn over brain, whereas today we know that brain takes precedent over brawn, and women have it. It is a documented fact that on Canadian farms the average level of formal education of farm women is higher than that of their spouses. In the Canadian Advisory Council's report "Growing Strong," it is noted that, between the academic years of 1975-76 and 1984-85 there has been an 80% increase in the number of women enrolling in faculties of agriculture at universities. Not only are more women than ever enrolling in agricultural programs, but also more women are graduating!

Then there are the banks. Women who apply for loans are often told that they just do not qualify. They are not seen as intelligent business women, but as mothers. Too many bank managers have the attitude that women are not farmers, but housewives. Farm women have little hope of success in business if they have to try to negotiate a loan with a bank manager with that type of stereotype in his mind. On the other hand, just let a husband go for a loan and the bank is very quick to demand his wife's signature and is very slow to put any limit on the asset value it asks her to place in jeopardy.

Our governments can try to protect us with family law acts. But as long as we are required to negate the protections of family law by signing most assets over the to the banks whenever our husbands need money, the protection given by government in reality is taken away by the banks, and farm women are left as vulnerable as ever.

The credit bureau is another story. When a man and a woman marry, they become one. The problem arises when the credit bureau decides which one! As it stands now, unless there is a specific request, a woman's credit rating is transferred to her husbands file when her name is changed to his. This can be especially difficult for a farm woman. If she is widowed, overnight her farm business can be without a credit rating.

All farm people need access to appointments on boards and commissions. We need the most knowledgeable, motivated and dedicated people to lead our industry. We need people who can rise above the divisive quarrels of commodity and region and have the vision to work for a stronger, more stable agriculture. Women definitely have all these qualifications. Yet there persists a large male-female imbalance of membership. This must be rectified. Remember, when you are not in the lead, the view never changes.

The last point to consider is access to a good quality of life for the farm family. Traditionally farm people looked after their own. Large extended families are still depicted by advertisers as part of the rural life sytle, as are bees, Sunday School picnics and barn raisings. In reality, the average farm family no longer has a large number of children. The multi-generations living on the farm property are by and large a thing of the past. The old rambling farm houses cost too much to heat. The demands on the time of the farm family leave little to look after the older generation, so the extended family is a rarity.

This has brought about some definite changes. Child care is a problem. Some 80 children under the age of 15 were killed on Ontario farms between 1971 and 1983. The special horror of that statistic is that the largest number of fatalities was among three-year-olds. Children are seen riding with dad on tractors or playing without supervision as dad gets machines ready for farm work or while mom milks the cows, feeds the hogs or whatever. Child care is needed. But to be used, it has to fit different criteria from those in the city. Farmers' needs are seasonal with long days that start very early and go until dark.

When work is just behind the house, child care has to be conveniently situated or the time required to go to the center puts too much strain on a work-filled day. It also has to be reasonably priced or many farm people cannot afford it, especially with the present farm gate prices. There are a number of solutions that are being tried at the moment. It is doubtful if any one will completely fulfill all the child care needs. Flexibility will be the key. For many communities and for many children, immediate action is needed, if our children are to be able to live in a safe environment and/or if farm women are going to have the freedom to leave their farms to take courses or off-farm jobs.

Unfortunatley family violence is common in the country as well as the city. However, resource centers are not. It is a well-known fact that family violence increases with an increase in stress. With farm families facing financial hardship daily, it should not be surprising to find there is a need for this type of social service. Thanks to some hard-working farm women in our area, one such center was started in Winchester. Some 1100 resident days have already been used since its opening in February of this year. The center is virtually always full. To date, 47 women and 78 children have used this shelter – astounding but fact!

One of the other factors that makes for an acceptable standard of family living is the quality of education in our rural schools. Can farm children compete with city students when they have noncomparable libararies or computer resources, no gym or shop facilities without taking hours out of the week to be bused to other schools? Yes, this situation does exist in rural Canada.

Medical and health care is a problem that farm women grapple with because they are the health care givers in the family. Resources are few in many communities. Children with speech, learning or physical impediments must once again travel long hours for help. You know who the chauffeur will be: good old mom.

A researcher visited our area, among others, to look at farm women as care givers. She found that they were almost totally responsible for all the health care of the family, so much so that she wondered about the care of the women themselves. So she asked what illness would keep them from their chores. The answers she got included brain tumors and loss of consciousness. But the lady she will remember told her how she had broken both her legs falling out of the mow; after medical treatment and with casts on both legs, she struggled on crutches to the barn over the winter ice to milk the herd of 100 cows because they could not afford to hire help and because she did not have Workers' Compensation as a result of the high cost of that insurance for farm partners.

The farm women in Quebec are lobbying diligently for changes in the Unemployment Insurance Commission so that farm women would be able to pay into UIC, thus making them eligible for maternity benefits like any other working woman in our Canadian society. As it stands now, many women can be found doing chores just before and immediately after the period of hospitalization required for delivery.

Women in farming have achieved many goals but still have many challenges before them. We love our land. We cherish our families and work in harmony with nature. We need your support and understanding to tackle the challenges of the future.

As Susan Koski stated in the study *The Employment Practices of Farm Women*: "Farm women make a significant contribution in the work effort, to the financial security, and to the nurturing of the family and the family farm, and they do so in an atmosphere devoid of support mechanisms, excepting those that may occur within the family unit. Governments ignore the contribution that farm women make to agricultural production through their agricultural policies, lack of benefits and shortage of basic service infrastructure. Legal protection for farm women is vague and discriminations from lending institutions is prevalent. Society in general has not concerned itself with the plight of farm women by not responding to their needs."

This is our challenge. We must work together. All levels of government, all agricultural organizations and all commodity groups for a better agriculture and a better life for the women and the farm families of Canada. In doing so, we will be enriching the most vital industry in our nation, the industry that is the foundation of our economy. Surely in a country as great as ours, there can be justification for providing equality to the people who provide mankind's most basic need – food.

Results of the Family Farm Forum's "Agenda for Discussion"

*Des Doran**

The family farm is more than a business firm; it is a place where people live. There is a growing awareness that economic issues affecting the family farm, including rising debt, high interest rates, and large fluctuations in commodity prices, also have significant impacts on farm families as social units. The impacts of human issues such as child care, stress, workload and isolation are also being increasingly recognized.

In launching the Family Farm Forum initiative in November 1986, the Minister of Agriculture, the Honourable John Wise said: "The whole purpose behind Family Farm Forum is to begin developing long-term strategies to ensure the continued viability of the family farm and the quality of family life while responding to changes taking place in agriculture." The primary objective of my presentation is to reveal some of the details of the analyses that have been carried out as a basis for stimulating discussion of their implications for future action. The four discussants received early drafts of a detailed technical report.

THE PROCESS

Approximately 50 000 copies of the Family Farm Forum's "Agenda for Discussion" were distributed across the country. A total of 7 119 completed agendas were received up to June 1987. This presentation, as are the Minister's report and the technical report, is based on the analysis of a sample of 1800 completed questionnaires. At this point, I wish to thank my colleagues in Agriculture Canada who contributed to the coding of the agendas, the preparation of computer programs and, of course, the typing of numerous tables.

The agenda asked each farm family to provide information on: demographics of the family, e.g., number and ages of children; farm size and commodities produced; how much importance the family attaches to 25 issues affecting the family and the farm; approaches to finding solutions; and on the organizations which should be involved. In spite of the highly mathematical nature of the analysis, it was not our intention to be narrow in approach. Our objective was to identify the most significant directions; to be "indicative" rather than "definitive." While the detailed computer analyses carried out are very important to the different regions and interest groups, we should not lose sight of the broad picture. Let us look then at the results, starting with the responses to the issues.

THE RESULTS

How important do farm families think the various issues are to the future of the family farm?

Families were asked to rate each issue as being: very important, important, having some importance or not important. Families were not asked to rank the issues. Nevertheless, the 1800 replies do reveal a ranking: 79% of the families reported that farm incomes is a "very important" issue, while only 20% reported off-farm income as "very important." We conclude that off-farm incomes is seen as being a less important issue than is farm incomes from farming activities. In analyzing the results, we have classified the first nine issues as "economic" issues: they impact very directly on the farm as a business entity, on resource organization, level of production and marketing. The other 16 issues impact more generally on the human and social dimensions of the farm family. They are primarily noneconomic issues.

Table 1 is presented as an example of how the information was tabulated. In order to simplify the presentation in the rest of this paper the values for "very important" and "important" have been added together.

RATING ECONOMIC ISSUES

Figure 1 shows how farm families rated the economic issues. The highest level of importance is attached to farm incomes (79% rating it "very important" and 17% rating it "important," for a total of 96%). This is not surprising. Farmers showed a similarly high level of concern for four other economic issues, namely, increasing costs of production, commodity prices, interest rates, and farm debt. The top five issues rank as follows:

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farm incomes	96%;
increasing costs of production	95%;
commodity prices	93%;
interest rates	91%;
farm debt	91%.

The next three issues, competition from imports, supply management, and availability/access to export markets, received essentially equal scores of 84%, 82% and 82, respectively. These issues received significantly lower "very important" ratings than did the first five issues. In their comments, farmers seemed to be not seriously concerned about competition from imports; many expressed satisfaction at the stabilizing influences of supply management.

Fifty percent or more of all farm families rated eight of the nine issues as being "very important." The lowest rating was given to the off-farm income issue; only 20% of the families rated off-farm income as "very important." Only one other issue in the entire questionnaire received a lower rating, and that was child care. These two questions should be further investigated as to their meanings.

From their written comments, it is clear that farmers see farming as a full-time occupation. The data from the demographic part of the questionnaire show that farming provides the entire family income for 62% of the families. Family income came mainly from farming for 28%, and only 9% of the families earned their family income mainly off the farm. It seems to be that, whereas the high ratings of the economic issues is not surprising, the low absolute and relative importance attached to the off-farm income issue is very surprising. It is one of the most important findings of this portion of the questionnaire. What are the implications for the future of the family farm of this preference for farm-generated income rather than for income generated off the farm? Is it realistic for farmers to continue to expect to earn their family income primarily from the farm?

Our discussions ought to examine how this fits with the long-term structural changes under way in the sector. Results of the 1986 Census of Agriculture show that just under 40% of farm operators worked off the farm in 1986. This percentage has been fairly constant since 1966, but the average number of days of off-farm work per farm reporting such work has continued to increase.

RATING NONECONOMIC ISSUES

The levels of importance attached to the noneconomic issues are shown in Figure 2.

Environmental concerns is the issue judged to be the most important now and for the future of family farm life. Its overall level of importance is 88%. Two other issues are close in importance: retirement and farm transfer (87%) and farm safety (85%). In their written comments regarding the agenda, families repeatedly stressed their concern for these three issues. In the case of environmental concerns, they stressed the importance of attention to safety in the use of chemicals on the farm.

There is anxiety about the difficulties of intergenerational transfers of farms; the retiring farmers would like to see farms passed on to family members, as has been the practice over past generations. However, in addition to the general difficulties young people have in raising the necessary capital, an increasing proportion of the younger generation are perceived as displaying a lack of enthusiasm for farming.

The fourth most important issue is the changing role of women, which 81% of the families rated as being "very important" and "important." This is a high rating, given that so many other noneconomic issues scored below 80%. Seven issues scored between 79% (education) and 70% (impact of rural depopulation).

Many families directed attention to the importance of stress/workload, which scored 74%. In contrast, pressure on families arising from events such as alcohol/drug abuse, family violence/breakdown, etc., received only 58%. Farm families clearly distinguished between the two issues.

One of the most surprising results of the analysis of the data is the low level of importance accorded to the child care issue. With a score of 43%, it received the lowest rating of all issues in the questionnaire. This is surprising in view of the current strong interest in child care in several forums across the nation.

I turn now to look at the results from a regional perspective, followed by differences introduced by the sex of the person who completed the questionnaire. This will be followed by a look at some interesting interrelationships between issues.

RESULTS FROM A REGIONAL PERSPECTIVE

Overall, there is a high degree of consistency between the levels of importance attached to both the economic and noneconomic issues by families in the various regions. However, there are some important differences between the regions.

Economic issues

The top three economic issues were: farm incomes, increasing costs of production and commodity prices. Tables 2, 3, and 4, emphasize the differences between provinces in the ratings given to these top three issues.

In all provinces, farm incomes ranked in the top two places, with scores of over 90% ("very important" and "important"). British Columbians rated increasing costs of production a couple of places lower than respondents in the other provinces. Those in Quebec similarly placed commodity prices a couple of places lower than did those in other provinces. Respondents generally ranked interest rates in the middle of the list, but those in Nova Scotia rated it most important. Respondents in Quebec, New Brunswick, Prince Edward Island and Newfoundland placed farm debt among the top three issues, whereas those in other provinces placed it lower.

Off-farm income was mentioned above; respondents in all provinces rated this at the bottom of the nine economic issues. However, those in Newfoundland attached a higher value (78%) than did those in the other provinces (national average was 54%).

Noneconomic issues

As with the economic issues, similarly high levels of importance were attached to the top three issues in all provinces. Table 5 shows the ratings for issues, by province.

Generally, in all provinces, respondents placed these three issues in the top four issues. Responses for the other noneconomic issues are as follows. In several provinces, the issue regarding the changing role of women was placed fourth to seventh. However, in British Columbia, Manitoba, Ontario and Nova Scotia, it was placed lower. It received higher than national average ratings in Prince Edward Island and Quebec (92% and 88%, compared with a national average of 82%).

The issue of farm labor was placed high in the East; it placed low in the West. Quebec, New Brunswick, Prince Edward Island and Newfoundland respondents placed this first or second, while those in Saskatchewan and Manitoba placed it near the bottom. In British Columbia, it placed first.

Stress was considered to be of very low importance in British Columbia and Newfoundland. It was rated more highly in Manitoba and Saskatchewan. In all provinces, pressure on families placed near the bottom.

The issue of child care received a low rating in all provinces, especially in British Columbia (25%) and Nova Scotia (27%). Quebec respondents gave it the highest rating among the provinces (65%).

DIFFERENCES ARISING ACCORDING TO SEX OF RESPONDENT

On economic issues, there is generally a high degree of correspondence between the scores for males and females, both within provinces and between provinces. In order to spend more time on the noneconomic issues, we will not look at details relating to the economic issues (see technical report for details).

On noneconomic issues, there were differences arising according to the sex of the respondent. The greatest differences between ratings by male and female respondents appear to be in the Atlantic provinces. Special attention may be directed to the two following issues.

Regarding the changing role of women, there were significant differences between the values given by males and females in all provinces except Manitoba. At the national level, the difference is very large, as shown in Table 6.

As for the issue of child care, there were large differences in the values given by males and females in all provinces except New Brunswick and Manitoba. Both males and females in all provinces ranked this issue very low. Women ranked this issue higher than men in all provinces except New Brunswick.

REPORT ON DEMOGRAPHIC AND PRODUCTION INFORMATION

The needs and concerns of farm families varied with a number of variables, including location of the farm, type of farming, family size and age distribution of family members. The following summary of demographic and production information on the sample farm families will help us in interpreting their responses to the questions about issues and concerns.

The average family size is 4.6 persons; 25% of families reported six or more family members. One third of the population is 18 years of age or younger; 8% are over 60 years old. Some 75% of respondents reported having relatives in or near the community where they farm. Almost 40% of the families reported being more than 16 kilometres (10 miles) from basic facilities (schools, doctors, etc.). Some 30% of families live more than 97 kilometres (60 miles) from major facilities (colleges/universities, medical specialists, major hospitals).

The average number of years in farming is 21.5 years; almost 40% of the farmers reported having 25 or more years in farming. The sources of family income are shown in Figure 3. And 54% of the respondents reported that they belonged to a farm or rural organization.

PARTNERSHIP BETWEEN GOVERNMENTS AND THE FARMING COMMUNITY

The "Agenda for Discussion" pointed out that deciding on what issues should be addressed in Family Farm Forum is just the first step: "The next step is to build the strongest possible partnership between governments and the whole farming community to prepare for the future" (Agenda for Discussion, Section 3). Farm families were asked to indicate how they think the process should work.

The agenda asked whether there were specific things that Agriculture Canada could be doing now, on its own or in partnership with provincial governments, agricultural organizations or farm families, to help prepare for the future. A majority of the respondents (1024 or 57%) did not answer this question. Of those who answered it, 98% (770 out of 784) supported action by Agriculture Canada.

Discussions with the pre-consultation network of farmers and farm/rural/women's groups that helped to develop the "Agenda for Discussion" had led to the identification of several possible approaches for use in the subsequent phases of the Family Farm Forum. There was an intermediate level of support for "workshops to discuss issues with grassroots participation" (57% in favor nationally) and the same for the "involvement of major farm organizations." The level of support for the "preparation of discussion or study guides to assist organizations in involving their members" was low (only 38%). However, the organizations themselves may find the departmental assistance in the preparation of such materials to be more useful than the individual members perceive it to be.

The final question in the agenda asked families to indicate which organizations they thought should be involved in the Family Farm Forum process (from a list of twelve organizations). The response rate to this question was very good, with over 95% responding. There was very high support for the involvement of farm organizations (88%), provincial governments (69%), farm women's groups (62%), financial institutions (58%) and marketing boards (54%). The organizations that are concerned with the noneconomic issues affecting the farm family generally received only low levels of support. This is consistent with the levels of importance assigned to these issues in section 2 of the agenda.

SOME SPECIAL INTERRELATIONSHIPS

There were some differences arising from farm types. Respondents were asked to indicate the commodities they produce. In our analyses to determine whether the type of farm affected how families responded to the issues, farms were classified into 40 primary commodity types. The data contain several severe limitations, but nevertheless the analysis reveals some interesting (if somewhat heroic) results.

Figure 4 examines how the different farm types rated the importance of commodity prices. Producers of wheat, corn for grain and potatoes rated this issue very highly. Overall, all commodity groups rated it highly.

Figure 5 shows comparable information with respect to the importance of increasing costs of production. Here, the highest levels were reported by barley, wheat, potatoes, and hog producers.

IMPLICATIONS FOR THE FUTURE OF THE FAMILY FARM

The Family Farm Forum is concerned with the future.

Farm families have clearly indicated that they are more concerned about what have traditionally been perceived as economic issues than they are about noneconomic issues. Farm incomes, costs of production, commodity prices, interest rates and farm debt are the economic issues generating the greatest concern. These economic issues are very important factors impacting on structural changes in Canadian agriculture.

The noneconomic factors are concerned with human and social dimensions of farm family life. Farm women have told the Minister that Agriculture Canada should be more concerned with these issues, as well as with the impact on farm family life resulting from the traditional economic issues. Farm families in their replies indicated that they want to pass their farms to succeeding generations in order to continue the family farm ownership pattern. They are concerned about preserving the environment and about farm safety. They have made it clear that they want to earn their incomes from farming activities, not from off-farm employment. The data reveal some interesting interregional differences and also some differences between levels of concern by females and males.

The Minister has made it very clear that he is interested in both sets of issues. However, Agriculture Canada does not have the mandate to provide answers to all the issues. Other levels of government and other departments of the federal government share the responsibilities. So too does the agri-food processing and other parts of the agri-food sector.

What does it all means for the future of the family farm and Canadian agriculture? That is really the subject of the next phases of the Forum. We look forward to the evolving dialogue.

TABLE 1 LEVEL OF IMPORTANCE ATTACHED TO ISSUE OF FARM INCOMES, CANADA

Level	Number of Families	Proportion
		(%)
Very important	1420	79
Important	316	17
Some importance	37	2
Not important	5	-
No answer	30	2
Total	1808	100

TABLE 2 PROPORTION OF RESPONDENTS ATTACHING HIGH IMPORTANCE TO ISSUE OF FARM INCOMES, BY REGION

	Proportion rating issue "very important"	Rank
	(%)	
National	80	1
Saskatchewan	87	1
Ontario	75	1
Quebec	77	2
Nova Scotia	79	1

TABLE 3 PROPORTION OF RESPONDENTS ATTACHING HIGH IMPORTANCE TO ISSUE OF COMMODITY PRICES, BY REGION

	Proportion rating issue "very important"	Rank
	(%)	
National	75	2
Saskatchewan	87	1
Ontario	68	2
Quebec	65	5
Nova Scotia	67	3

TABLE 4 PROPORTION OF RESPONDENTS ATTACHING HIGH IMPORTANCE TO ISSUE OF COSTS OF PRODUCTION, BY REGION

	Proportion rating issue "very important"	Rank
	(%)	
National	73	3
Saskatchewan	86	3
Ontario	68	2
Quebec	67	4
Nova Scotia	54	5

TABLE 5 RANK OF IMPORTANCE ATTACHED TO SELECTED NONECONOMIC ISSUES, BY REGION

	Rank of noneconomic issues		
	Changing role of women	Farm labor	Stress
National	4	7	9
Saskatchewan	6	13	11
Ontario	7	6	10
Quebec	4	2	7
Nova Scotia	12	6	7

TABLE 6 PROPORTION OF RESPONDENTS ATTACHING HIGH IMPORTANCE TO ISSUE OF CHANGING ROLE OF WOMEN, BY SEX OF RESPONDENT

	Proportion rating issue		
	"Very important"	"Important"	Total
		(%)	
Male	37	40	77
Female	60	29	89

FIGURE 1 PROPORTION OF RESPONDENTS ATTACHING HIGH IMPORTANCE TO SELECTED ECONOMIC ISSUES

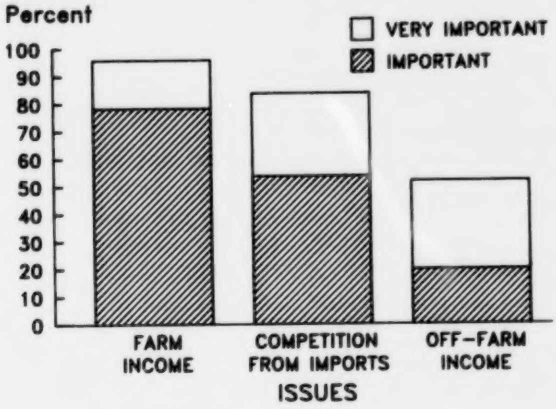


FIGURE 2 PROPORTION OF RESPONDENTS ATTACHING HIGH IMPORTANCE TO SELECTED NONECONOMIC ISSUES

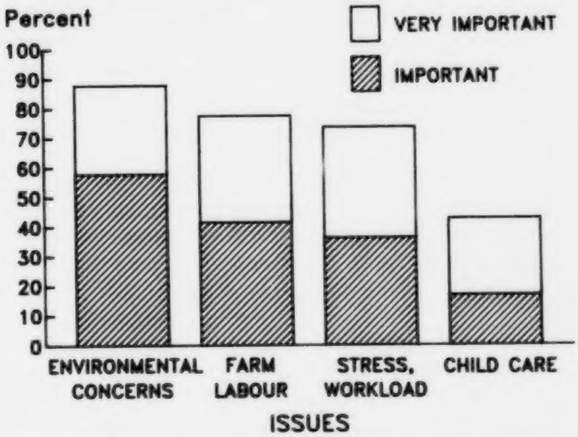


FIGURE 3 MAIN SOURCES OF FARM FAMILY INCOMES

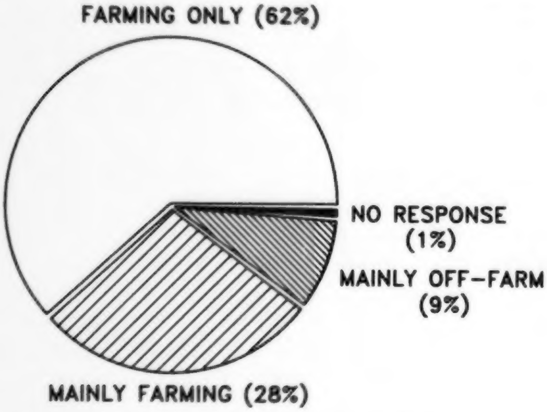


FIGURE 4 PROPORTION OF PRODUCERS OF SELECTED COMMODITIES ATTACHING HIGH IMPORTANCE TO ISSUE OF COMMODITY PRICES

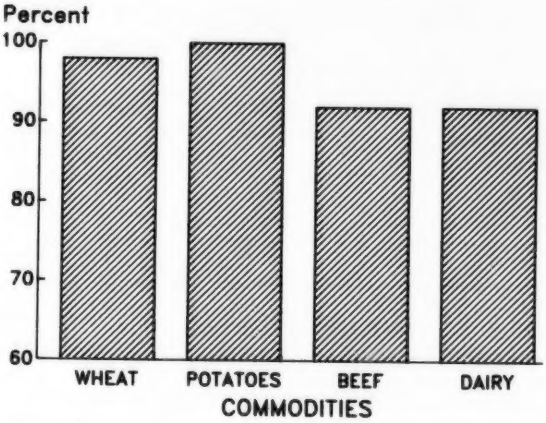
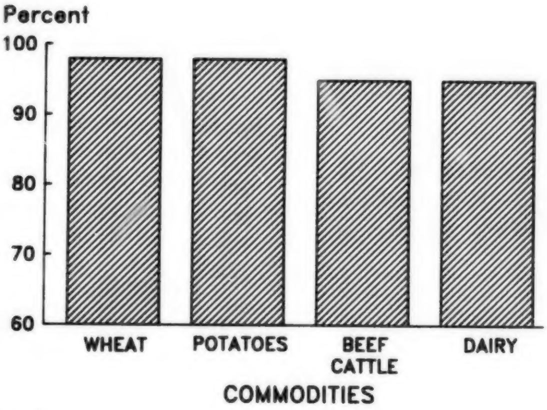


FIGURE 5 PROPORTION OF PRODUCERS OF SELECTED COMMODITIES ATTACHING HIGH IMPORTANCE TO ISSUE OF INCREASING COSTS OF PRODUCTION



A Provincial Government's Response to the Family Farm Forum's Survey

*Jack Drew**

INTRODUCTION

Farm families are hurting. The members of the older generation has seen their retirement fund evaporate and their hard-earned, after-tax savings depreciate in leaps and bounds and they cannot stop it because nobody wants to buy the farm. Once, they helped a son or daughter start farming a few years ago on a time sale, as a guarantee; and now they see the son or daughter losing the farm and themselves losing their pensions.

Middle-aged families are hurting from the friction of the mortgage rubbing up against asset values, and the younger generation has lost the desire to enter the business of farming.

In Saskatchewan, the farming family is facing serious financial difficulty. In 1987, market income fell well short of production expenses. Without government programs such as WGSA and the Special Canadian Grains Program, farmers would have had negative incomes in 1986 and 1987. Land has lost $10 billion in worth. Saskatchewan farm income is forecast to reach record low levels by 1990 when the full effect of the 1985 U.S. Farm Bill will be felt and the major safety net program embodied in the WGSA will ratchet down.

Generous price support systems in the EEC and the U.S., the move toward self-sufficiency among countries such as India and China, and rapid improvements in agricultural technology have led to growth in grain production outpacing effective demand. This has led to increasingly intense competition in the international marketplace, characterized by falling prices and export subsidies.

The financial difficulties of farmers are reflected in debt-servicing inability. Even with the most optimistic scenario for grain prices, the farm debt situation will not be resolved without special measures.

The farm debt problem has its roots in the inflationary period of the 1970s and early 1980s when the prices of land, machinery and equipment, and other farm inputs were rising at dramatic rates. With low real rates of interest, good commodity prices and rising farm asset values farmers were anxious to borrow and lenders were anxious to lend to finance farm inputs. In Saskatchewan, farm debt rose from less than $1 billion in 1971 to almost $5 billion by the end of 1985. In the early part of the 1980s, interest rates reached unprecedented levels, commodity prices plummeted, and many farmers were left with a debt load that simply could not be serviced. Those farmers have been in a struggle to meet their obligations – indeed, many are in a struggle for survival – for several years.

Not all Saskatchewan farmers have a debt problem. The fact that 30% of the farmers carry three quarters of the total debt in Saskatchewan suggests that a good many farmers, although squeezed by falling commodity prices, do not have the added burden of heavy debt-servicing requirements. However, the Farm Credit Corporation suggests that 11% of Saskatchewan farmers are basically insolvent while additional 28% are having considerable cash flow difficulty. Close to 40% of Saskatchewan farmers have financial cause for serious concern.

Foreclosure notices in Saskatchewan, expected to reach 900 in 1987 compared with 196 just five years ago, indicate a worsening situation. These families lose their business, their home, their school, their friends and their entire purpose in life is disrupted.

The statistics do not describe the true human cost of the financial crisis. Financial distress leads to increased stress within the family, loss of self-confidence and a sense of lack of personal control over one's life. Often the outcome of financial distress has more tragic consequences, such as severe depression leading to family breakup and moral bankruptcy.

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* Deputy Minister, Saskatchewan Department of Agriculture.

ACTION

Certainly, a process of consultation between government and farm families such as the Family Farm Forum will help to facilitate solutions to both the farm income problem and the farm debt crisis. I want to mention some of the ways Agriculture Ministers across Canada are guided by a national strategy in addressing the difficult situation in agriculture. The strategy focuses on the short term and the long term: it addresses the short-term needs of an industry in serious financial difficulty and it addresses the long-term competitiveness of the Canadian agriculture sector.

Given the extent of the farm debt difficulty and the poor prospects for improvement in global grain markets in the short term, Agriculture Ministers are currently focusing on farm income support and farm finance issues. Deficiency payments are seen as a stopgap measure until offshore subsidies are rationalized. The serious financing problems facing farmers (for example, the difficulty in obtaining operating credit and the survival of the high debt farms) have made new farm financing initiatives a priority.

SHORT-TERM THRUSTS

Solutions to the farm debt problems will be needed to temper a potentially large exodus of highly productive farmers. Measures have been taken already by both levels of government. Provincially, Saskatchewan has implemented restrictions on foreclosure actions and has provided operating loan guarantees to farmers needing assistance, including a $1 billion production loan program, fuel cost reduction, interest rebates and other measures.

Federally we have seen Farm Debt Review Boards, fuel tax rebates, the Special Canadian Grains Program, the Rural Transition Program, and FCC commodity-based loans and shared-risks loans. These types of programs have eased the financial burden of some farmers. But further measures are needed to deal with the debt problem.

The Saskatchewan government is currently exploring program options. A symposium was held in Regina in late October 1987 to discuss approaches to the farm finance situation and more specifically the farm debt crisis. Delegates at the symposium discussed debt legislation, debt setaside, operating loan guarantees, interest stabilization, guaranteed vendor mortgages, special income support and equity financing, all options which were discussed under the National Agriculture Strategy approved by First Ministers in late 1986. A government committee has toured the province, holding public meetings to provide information on some of the options and to get input from farm families on what should be done. The committee is now preparing a report for the government of Saskatchewan.

The Saskatchewan government will be assessing all of the options available in terms of how well they might address the obvious questions in these difficult financial times. The questions include:

- How will farmers who took on high debt in better economic times manage to meet their commitments and survive?
- Where will farmers obtain operating credit when lending institutions are becoming more and more sceptical about the prospects of repayment?
- How will intergenerational transfer of farmland occur?
- How will people enter with confidence and others retire with dignity and security?
- How will farmers borrow money with the confidence that they will not again face 20% interest rates?

It is not likely that any one measure will be the total answer to the debt problem. Debt legislation such as the Saskatchewan Farm Land Security Act currently in place to restrict foreclosure has eased some problems. By itself, however, this act will not solve the debt problem.

The government of Saskatchewan is looking at ways of dealing with debt problems and not just delaying them. There are several ways to do this. Some debt write-down happens now between creditors and farmers and no doubt there are measures governments could take to facilitate more of this activity. One approach the government of Saskatchewan is looking at very closely as a means of risk sharing is equity financing.

LONG-TERM ACTIVITIES

In the longer term, trade liberalization is a major objective of Canadian Agriculture Ministers. It is the goal of the Saskatchewan and the Canadian governments in trade negotiations to achieve a rational trading atmosphere at the international level. Success at the GATT agriculture negotiations is critical to the future prosperity of the grains sector.

Once other government subsidies to agriculture are rationalized, the major basis for competition among agricultural producing nations will be costs of production. Governments will continue to play a large role in assisting the competitiveness of agricultural producers through continued research directed at lowering per unit costs of production, marketing and maintaining our competitive edge.

CONCLUSION

I believe it is a positive step to incorporate a consultation process between government and farm families in agricultural policy development. The Saskatchewan Department of Agriculture has made a point of consulting farmers on major policy issues: we consulted with farm groups on the National Agriculture Strategy; we held public hearings on farm input costs; and most recently we held a symposium and public meetings on the farm finance situation. This public consultation is indispensable in providing the input needed to develop and deliver government programs that are effective in dealing with the farm income and debt problems.

I encourage Agriculture Canada and provincial departments of agriculture to continue the process of consultation through avenues such as the Family Farm Forum as well as through public hearings on specific issues. Government policy will be better able to serve the needs of the agriculture sector if governments keep in touch with farming families.

Let us try our utmost to avoid future recurrence of the hurt farm families are feeling today. Young people need confidence in the industry, operating farm families need more flexibility in their farm financing options, and would-be retiring families deserve to be able to retire when they wish, with dignity and security of their retirement funds.

I am pleased to be part of the process.

Response of a Farm Organization to the Family Farm Forum's Survey

Brigid Pyke[*]

I was asked to reply to this particular survey from a farm organization's point of view. The questions that were put to me by the organizers were:

- Do you have any problems with the results of the Family Farm Forum's survey?
- Do the survey results validate the issues the OFA is working on? How do the issues the OFA works on rank in priority compared to the survey results?
- Based on the results, how do you see the future of the family farm? How should these results be used? Where should Agriculture Canada go from here?

I would like to answer those questions as succinctly as possible.

As for any problems with the results of the survey, the short answer is no. In looking at the survey results, there is nothing very startling in them. The only comment I have is that the survey appears to have been largely geared to discern women's viewpoints on things. I have often felt that, if asked, women would not respond differently from men to any significant degree regarding what they see as the problems or the solutions to many agricultural issues. My experience in farm organizations supports this view.

There are a few variances. In her presentation on "Women in Agriculture," Dorothy Middleton outlined a number of very valid complaints that women have against the process, either organizationally or against the laws of the country. There is certainly plenty of room for change but, by and large, I do not think women have a distinctly different view of farm issues from men.

It is not surprising that finance is rated at the top of the economic issues. I am prepared to admit that the responses of men and women have to financial stress on the farm can differ, and we see that in discussions in our organization. I think that an awful lot of men, for whatever reason, feel that they have sole responsibility for the economic or financial success of the farm. Often, having not involved the women in many of their discussions, the men find it difficult to explain this to the women. The women almost always experience, at a very personal level, that there is not enough money to go around. Not only does she feel for her husband's plight but also she has to be the one to tell the kids that there is no hockey equipment this year, that they cannot go to this, or that several things have to be stricken from the Christmas list, which may be short to begin with.

Many of the issues on which the OFA is working are also addressed in the survey: finances, free trade, tax reform, stabilization, the Farm Credit Corporation, debt review. These are all issues that have to do with the financing of Canadian farms and picking up the pieces when they are not financed properly. I think that organizationally we are really in step with the results of this survey in these areas.

We do also recognize noneconomic issues. I think that all of the noneconomic issues mentioned in the survey, including environmental concerns, retirement and transfer, farm safety, just to mention the first three, have been addressed by us. We have long-standing committees in our organization that deal with environmental issues, pesticide regulation and land use issues, conservation, tillage, retirement and farm transfer, to name a few. The farm organizations have also been diligent in lobbying for capital gains tax exemption for farmers and in trying to obtain benefits in that area for farmers looking to transfer their farms. I am not trying to use this session as a platform to justify our organization, but I think that it is fair to say that we are dealing with many if not all of the noneconomic issues.

As for the issue of farm labor, getting skilled seasonal labor in certain areas, labor regulation and workers' compensation are important issues demanding attention. We deal with these issues on a regular basis.

Regarding transportation, farm organizations have been very involved, for example, in upgrading regulations for transporting livestock and in maintaining farm plates so farmers can use the highway system and pay at a discounted rate through their license fees. We are working reasonably well on almost all of the issues that are earmarked by the respondents to this survey.

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[*] President, Ontario Federation of Agriculture.

It is also gratifying to note that farm families indicated they want the government to work first and foremost with farm organizations. I think a valid observation can be made that trying to get to the grassroots through a survey or consensus building is beneficial. We would certainly do more of it as an organization if we had the funds and the human resources, because it is gratifying to see what an unspoiled vision of the issue is. But from my involvement with our organization, I can see the difference between what farmers out on the concession roads say when asked what they think of this or that and the way the discussion will go on the floor of our board meeting, where there are 135 members from the counties and the different commodity sectors. In the board room, the issue is debated and a position is almost always formed somehow, somewhere, in the middle.

A classic example of this is the issue of debt review. If you ask a respondent whether he believes in write-down of debt, I would expect that the vast majority, especially those holding any kind of a mortgage, will fling their hands up and say they do not believe in anything like that. Those struggling to pay their debts are not going to agree with it, and those holding mortgages are even less likely to. There are some who are just psychologically opposed. However, when you get into a discussion and put the question in a different way, you can see that there is room for consensus in the middle. For example, one could ask, "Out of the 34 000 business bankruptcies in Canada in 1984, why is it that fewer than 600 of them could negotiate a settlement between debtor and creditor that left the firm in business?" By extending the question to all businesses generally and not just farms, you would get a different response. Most people would respond that this is a pretty bad batting average, given that we spend all kinds of money to set up new businesses and run the Federal Business Development Bank. They would think we should be able to do a better job salvaging businesses that get into financial trouble, including farms. So, then we start discussing the mechanisms by which that can happen.

This is an example of the testing by fire of people's opinions that comes through the organization or through discussion, and this is really what is needed. That process is missing in any survey process where you just ask people cold what they think of an idea. When they have to stand up on the floor in front of a microphone to defend their idea and have to take a chance on being criticized by people who hold a different view, decent policies emerge. This is true consensus, and I think that our organization does it well.

Both the OFA and the CFA have over 50 years of experience and I think that the record of the Canadian federation, in particular, is unequaled. I cannot think of any other sector across our society that has the type of format for bringing in a representative from every province to decide sector policy. The proof is in the pudding. For example, I honestly believe that the consensus that allowed the government to pay out that Special Grains Program, with as little heat as they did get, was due to the work and the consensus building. I think the farm organizations are able to contribute substantially to policy formation in the country.

Turning finally to faith in the future of the family farm, I agree that the family farm is going to remain the dominant type of farm in this country. Had I responded to the Family Farm Forum, my response with respect to the definition of the family farm would have been that it is the type of operation where decisions are made on a daily basis and on an organizational basis by family members. The result is that control of the farm is not held outside the family. I would not have been so concerned about labor, because there is a big difference, for example, between milking cows, where the family could reasonably be expected to provide the labor, and cultivating 30 acres of broccoli, which obviously cannot be done by family labor alone. Given the diversity of farm operations, the broader view of what constitutes a family farm has to do with the source of the decision making. Given this definition of a family farm, I think it is going to survive. At the same time, I agree with the comments made by Norah Keating in her presentation on "The Family Farm: Stresses and Strategies" regarding the existence of some very large farm operations, which obviously are very dependent on outside labor and which rely on four or five families working well together. It takes a lot of effort to keep that size of operation together. There is some truth in the saying, and we have seen it in these times, that the bigger they are, the harder they fall. I look around in our neighborhood and there are some very modest-sized operations that have the stamina to stay in the business for decades without the stresses that some of the larger farms have. It is pretty hard to make general statements; nevertheless, I think that farms will continue to get larger and farmers will amalgamate their resources to stay in business by this means.

We have met past challenges in agriculture and I believe that we can do it again. I would like to think, as the leader of a provincial farm organization, that there is much more that remains to be done to seek a consensus, both inside the organization and with the commodity sector. We are up to that challenge.

I also think that our organization does not preclude the involvement of women. I am often asked, but I do not have any good theories on why we do not have more women involved in our organization. We have not embarked on any overt processes to try to get them involved, but I would hope that women would feel freer to become involved when they see other women, such as myself, involved in the organization. If it takes more than that, we are open to suggestions. It is a tough problem.

The Future of the Family Farm

*Claire Thériault**

INTRODUCTION

The *Fédération des agricultrices du Québec* was delighted to accept the invitation of Agriculture Canada to take part in this round table on the family farm and the future of Canadian agriculture.

Our talk will focus primarily on the report of the Farm Family Forum and on our position regarding the future of the family farm.

COMMENTS ON THE REPORT

I would first of all like to say that we read with considerable interest the report on the family farm and the document describing the results of the survey with even more interest.

We were especially impressed with the fact that the Minister of Agriculture has taken such a keen interest in the future of the family farm in Canada. The family farm is in a precarious situation at the present time. Farmers and farm women are directly affected by what happens to the family farm. He has the great merit of listening to what we have to say. We would like more than this, though. Not only do we want to be heard, but also we want to be understood and we would like our expectations to be met.

The reports I have just referred to outline many of the problems experienced in agriculture. To solve them, though, we believe that it is necessary to go further than simply to describe and deplore them. We feel that the problems must be pinpointed in a concise way and the origin of the problems understood. Efforts can then be made to find appropriate solutions.

In our opinion, therefore, simply listing the problems does not go nearly far enough.

We are happy to note from the study that 38.1% of respondents were in partnership with their spouses. The number of single owners answering the questionnaire represented a smaller percentage (36.5%).

This information is especially important from the standpoint of the *Fédération des agricultrices du Québec*, since we strongly encourage women to become farm owners. Women often become farm owners through partnership.

We were completely dumbfounded, though, by the disparities between some male and female answers and the differences between one region and another.

We were particularly surprised to learn that the result for child care in the farming community was only 44%. It is immediately apparent, though, that 67.5% of the respondents were men. We concluded that they were not very concerned about the care of their children. What surprised us even more was the fact that 60% of Quebec respondents were concerned about this question.

How can this difference be explained? It is true that the *Fédération* I represent has stressed this issue in Quebec and that the farming community in Quebec is aware of it. However, the fact that in Nova Scotia no woman but 70% of the men identified child care services as a priority in the province leads us to question the results even more. Are Nova Scotia farmers so concerned about the issue that their wives totally ignore it?

POSITION OF FARM WOMEN ON THE MATTER OF THE FAMILY FARM

I would also like to talk briefly about our position on the matter of the family farm.

I see no need to stress that the family farm is the basis of the social and economic structure of the Quebec farm community. However, we are calling this structure into question on the grounds that the concept of economic profitability is eclipsing the concept of quality of farm life.

For too long we have denied the fact that farmers need decent living conditions if they are to maintain their active involvement in agriculture. This shortcoming largely explains the deep malaise that now exists on the farm.

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* *Fédération des agricultrices du Québec.*

We must all work together to define a new family farm concept that combines both quality of life and economic profitability. We believe that, given the current economic situation, farms will have to excel more and more, but economic improvements should not be to the detriment of those who live and work on the farm. The family farm must no longer be considered simply a business. It consists of human beings who have intimate affective relations.

For that reason, we are opposed to the excessive debt burden. Concern about debt is causing incredible stress and is leading to conflicts in working relations and in the farm family that may degenerate into violence. Farm accidents are also more likely to happen.

We are also opposed to free trade, since it threatens the very concept of the family farm by accelerating the integration of agricultural production and forcing farms to grow larger and larger to compete with the type of farms that exist in the United States. Free trade will have clearly disastrous consequences.

We also think that the work done by all members of a family farm should be recognized for its true worth. We have to stop considering that such work should be done for nothing. This will require a major change in mentality on the part of the farming community and those involved in the community. Agriculture Canada has a role to play in initiating change within its structure and should take this into account in the development of programs of its various commissions, boards and corporations.

We also feel that for the family farm to survive and develop, its transfer to the next generation must be made possible. Current farm transfer mechanisms will have to be improved and exceptional financing will have to be made available to those taking over. Soil degradation and acid rain are causing forest dieback and reducing crop yields. Solutions to these and other environmental problems are urgently required.

CONCLUSION

I would like to thank you for your attention. We are very much interesting in taking part in future discussions on the family farm.

Some Agricultural Policy Issues

*Michele Veeman**

The principle underlying the Family Farm Forum and the attempt to develop an exchange of perceptions and ideas between farm families, farm organizations and government must be applauded as a very useful step, especially if this initiative eventually leads to a wider discussion of the economic and social dimensions of these problems. Fuller understanding of the nature of farm problems and the economic and social implications of alternative farm programs should result in improved policy for Canadian agriculture. It should, however, be recognized that the development of appropriate agricultural policy also necessitates representation of the interests of consumers and taxpayers as well as the concerns and interests of producers.

I understand that the intent of the questionnaire survey that forms the basis of this discussion was primarily to elicit views from a wide cross-section of farm families regarding the importance of a prespecified list of generally stated issues. If the main focus of the survey is to initiate a process of communication, the issue of statistical validity arising from the questionnaire design and the sampling procedure may not be a prime consideration. However, the nonrandom process of distributing the 45 000 questionnaires, mainly through farm organizations and Members of Parliament, as Des Doran mentioned in his article above on "Results of the Family Farm Forum's Agenda for Discussion," does raise questions as to the representativeness of the survey results.

Comparison of the regional distribution of the questionnaires with the regional distribution of farm numbers from that 1986 Census (Statistics Canada, 1987b) indicates considerable underrepresentation of farm families in Alberta and Saskatchewan and, to a lesser extent, in Quebec while farm families in Ontario and the Maritime provinces were overrepresented in the questionnaire distribution. The subsequent process of drawing a sample of some 1800 responses from the total of 7000 returned responses did not achieve regional representation in line with the distribution of census farms. Comparison of the regional representation of the sample of 1800 indicates that again there is considerable underrepresentation of responses from Alberta and Saskatchewan and overrepresentation from the Maritime provinces, particularly from Prince Edward Island. The sample of 1800 also involves overrepresentation of Quebec responses and some underrepresentation of those from Ontario. To the extent that the characteristics of agriculture and the nature of farm problems vary regionally, there is likely to be bias in some results of the survey.

Comparison of the profile of respondents reported from the analysis of the sample of 1800 with the benchmark profile given by the 1986 Census of Agriculture is not facilitated by their different definitions and concepts. The farm ownership pattern reported for the 1800 farm families does not seem representative of the type of farm organization indicated by the 1986 Census, which indicates considerably fewer partnerships and slightly fewer corporations than reported by the Family Farm Forum respondents. As noted above, however, the issue of the representativeness of the survey results may be considered of less importance than the process that is involved here.

I now turn to the results of the Family Farm Forum survey. In the framework of policy analysis, the issue of farm income can be viewed as one of the goals for agricultural policy that generally will be rated very highly by farm families. The other three of the listed factors that are considered to be of most importance by respondents are very directly related to farm income. Net farm income is directly affected by changes in the levels of commodity prices and costs of production. Of all the components of farm costs, interest on indebtedness showed most growth over the past decade, increasing from 11% of total farm operating expenses in 1976 to a peak level amounting to 19% of operating expenses in 1981. Interest on indebtedness subsequently fell to 14% of farm operating expenses in 1986 when it was the third largest source of farm expenses, behind farm machinery and feed expenses (Statistics Canada, 1987a). This component of farm costs is in turn directly affected by both the level of farm debt and the level of interest rates. Thus there are immediate and direct relationships between farm income and the other three of the listed economic issues that were considered to be of most importance by many of the farm family respondents.

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* Department of Rural Economy, University of Alberta.

In contrast, the other listed economic issues of competition from imports, supply management, and access to markets can be regarded as some of the particular "means" of achieving policy goals rather than being goals themselves. It is therefore not that surprising that these should be rated as important by somewhat fewer respondents. Given the rather different nature of agriculture in different regions of the country, it is possible that some differences in the order of ranking of these three "indirect" economic factors might have occurred had the sample been fully regionally representative. As might be expected, access to export markets was ranked as particularly important by respondents in the Prairie provinces and these, as noted previously, are underrepresented in the sample.

The issues considered to be noneconomic in nature that were rated as most important are also of considerable interest. While not ranked as highly as farm income and its directly related components, the other issues that are considered to be of particular importance, specifically environmental concerns, farm transfer and retirement, and farm safety, do have obvious effects on the quality of life for farm families. At least one of these issues, that of farm transfer and retirement, has clear economic as well as social causes and implications. The 1986 Census indicates that agriculture continues to be characterized by a relatively aging population. Further, the long-run trend of increasing farm size and increasing capital intensity in agriculture, coupled with more modest economic prospects for agriculture through the balance of the 1980s than were evident in the 1970s, suggests that the issue of farm transfer and retirement is likely to continue to be of concern to many farm families in the future.

Regarding the issues of farm income and related factors, the adverse economic pressures and financial stress that currently affect appreciable segments of Canadian agriculture pose particular challenges for Canadian agricultural policy. There are pressures for interest rate subsidies, for subsidies on outputs, and for mechanisms of indirect subsidy (such as supply management or limitation of imports) that transfer income from consumers to producers. The manner in which such subsidies are applied does have important implications for both economic efficiency and income distribution. As economists have long noted, distributing subsidies on the basis of output or input levels of farms is likely to distort production decisions, to distort the values of farm assets and to provide most benefit to larger farms without necessarily providing adequate support to those families in most need. An example of some of these problems is provided by concessional interest rates. While this is a popular type of program, it is a two-edged sword for agriculture. It does increase the ability of some to enter agriculture through land ownership and it tends to maintain or increase land values. But in so doing, these programs also increase the capital requirements for new entrants, increase their debt levels, and reduce their rate of return on capital employed in agriculture. It is unfortunate that agricultural subsidies generally support farmland values or the values of crops and livestock, rather than supporting farm families. Consequently, an issue that farm families, their organizations, and government should debate is the appropriate design of short-term assistance to farm families to cushion the impact of economic stress such as is currently concentrated amongst segments of the grain and oilseeds sector and the tobacco industry (Agriculture Canada, 1987).

In terms of the overall theme of this conference – structural change in the agricultural and food sector – it is evident that Canadian farm families have been involved for many decades in the process of major structural adjustments within agriculture. Technical advances have continued to be developed with the aid of governments and industry and to be adopted by farmers, often in the form of mechanical innovations, but also in the form of biological, chemical, and management innovations. There has been continued substitution of capital for labor employed in agriculture. Farm size has tended to increase and the numbers of farms and of farmers have tended to fall, although at a much slower rate than in earlier decades. There has been increasing direct involvement of women in agriculture. All these structural changes are likely to continue. In the main, they are necessary adjustments to the growth and development of the Canadian economy and to the continual search for efficiency and improved living standards in the Canadian agricultural economy. Agriculture in Canada in the 1990s will continue to be dominated by family farms but these will be even larger and more capital-intensive farm businesses than in earlier years.

I suggest that major challenges for agricultural policy in responding to the legitimate concerns of farm families are, first, to aid in the search for and dissemination of improved technology and increased productivity and, second, to aid in provision of effective safety net programs to cushion the impact of the considerable instability that affects agriculture. It is to be hoped that these will cushion, but not prevent, necessary structural changes so that the competitive position of Canadian agriculture is maintained while farm families are treated equitably relative to other segments of society.

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